

# The Mining Journal

## RAILWAY AND COMMERCIAL GAZETTE:

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

No. 1216.—VOL. XXVIII.

London, Saturday, December 11, 1858.

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sizable margin.

CROFTS refers the readers of the Journal to his article on the changes and aspects  
of the mining market, on page 826, in which will be found general and particular discussions  
on the value of mining property, on, or irrespective of, the market; his opinions  
backed by experience, are not offered as infallible. He will be happy to advise ex-  
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and the public that, in consequence of the numerous applications to publish a  
list of prices in the *Mining Journal*, and to avoid at the same time giving offence  
to those who will issue weekly in this column his LIST OF PRICES of those SHARES  
are DEALT IN on the market, at close prices up to Friday evening, by giving  
BUYING and SELLING PRICES:—

	Buying.	Selling.		Buying.	Selling.		Buying.	Selling.			
Consols	7	8	Southbridge Consols	129	130	South Caradon	405	415	South Wheal Frances	237½	242½
Wheat	5½	5½	South Wheal Frances	237½	242½	South Tolgs	80	85	South Tolgs	129	130
Car and Bassett United	12½	13½	St. Day United	129	130	St. Ives Consols	35	40	St. Ives Consols	62½	67½
Carrie and Jane	6½	7½	South Lady Bertha	1½	1½	South Lady Bertha	1½	1½	South Lady Bertha	1½	1½
Wheat	62½	67½	South Condurrow	45	60	Tolcarne	5½	6½	South Condurrow	45	60
Dong	4	6	Tolvadden	5½	6½	Tolvadden	5½	6½	South Wheal Frances	237½	242½
Wheat	5½	6½	Wheat Harriett	13½	16½	Wheat Harriett	13½	16½	South Wheal Frances	237½	242½
Wheat Russel	6½	7½	Wheat Charlotte	19	21	Wheat Charlotte	19	21	South Wheal Frances	237½	242½
Basset	16½	17½	Wheat Addams	26½	27½	Wheat Addams	26½	27½	South Wheal Frances	237½	242½
Roscarwe	1½	4½	Wheat Grenville	1½	1½	Wheat Grenville	1½	1½	South Wheal Frances	237½	242½
Alfred	3½	4½	West Basset	22	23	West Basset	22	23	South Wheal Frances	237½	242½
Car and St. Anthy.	132	135	West Par Consols	9½	10½	West Par Consols	9½	10½	South Wheal Frances	237½	242½
South Tolgs	13	14	West Caradon	135	137½	West Caradon	135	137½	South Wheal Frances	237½	242½
Wheat (or call paid)	½	½	Wheat Crebior	½	½	Wheat Crebior	½	½	South Wheal Frances	237½	242½
Daren	11½	11½	Tincroft	½	½	Tincroft	½	½	South Wheal Frances	237½	242½
Wheat Russel	6½	7½	Trevolo	15	17	Trevolo	15	17	South Wheal Frances	237½	242½
Basset	16½	17½	Vale of Towy	½	½	Vale of Towy	½	½	South Wheal Frances	237½	242½
Roscarwe	1½	4½	West Basset	22	23	West Basset	22	23	South Wheal Frances	237½	242½
Alfred	3½	4½	West Wheal Seton	285	295	West Wheal Seton	285	295	South Wheal Frances	237½	242½
Car and St. Anthy.	132	135	West Par Consols	9½	10½	West Par Consols	9½	10½	South Wheal Frances	237½	242½
South Tolgs	13	14	West Caradon	135	137½	West Caradon	135	137½	South Wheal Frances	237½	242½
Wheat	½	½	Wheat Crebior	½	½	Wheat Crebior	½	½	South Wheal Frances	237½	242½
Wheat	½	½	Wheat Harriett	13½	16½	Wheat Harriett	13½	16½	South Wheal Frances	237½	242½
Caradon	½	½	Wheat Charlotte	19	21	Wheat Charlotte	19	21	South Wheal Frances	237½	242½
Bray	2	2½	Wheat Addams	26½	27½	Wheat Addams	26½	27½	South Wheal Frances	237½	242½
Bertha	1½	4½	Wheat Grenville	1½	1½	Wheat Grenville	1½	1½	South Wheal Frances	237½	242½
Wheat Basset	8	8½	Wheat Mawdry	8½	9	Wheat Mawdry	8½	9	South Wheal Frances	237½	242½
Dolcoath	5½	6½	Wheat Mary	275	285	Wheat Mary	275	285	South Wheal Frances	237½	242½
Levant	3½	4½	Wheat Uny	8½	9½	Wheat Uny	8½	9½	South Wheal Frances	237½	242½
Minera	5	5½	Wheat Ellen	2½	3½	Wheat Ellen	2½	3½	South Wheal Frances	237½	242½
Downs	2½	2½	Wheat Basset	212½	217½	Wheat Basset	212½	217½	South Wheal Frances	237½	242½
Robert	2½	2½	Wheat Butler	135	145	Wheat Butler	135	145	South Wheal Frances	237½	242½
Tolgs United	25	30	Wheat Edward	25	26	Wheat Edward	25	26	South Wheal Frances	237½	242½
Consols	4½	5	Wheat Kitty (Levant)	8½	9½	Wheat Kitty (Levant)	8½	9½	South Wheal Frances	237½	242½
Wheat	65	67½	Wheat Margaret	60	62½	Wheat Margaret	60	62½	South Wheal Frances	237½	242½
Consols	16½	17½	Wheat Mary Ann	46½	47	Wheat Mary Ann	46½	47	South Wheal Frances	237½	242½
Car and Bassett	16½	17½	Wheat Trewhay	28	29	Wheat Trewhay	28	29	South Wheal Frances	237½	242½
Car and Bassett	27½	30	Wheat Wrey	2	2½	Wheat Wrey	2	2½	South Wheal Frances	237½	242½
Wheat	48	50	Yarner	½	½	Yarner	½	½	South Wheal Frances	237½	242½

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THE JOURNAL OF MINING.

## ON COPPER SMELTING.

In last week's Journal we published Dr. HYDE CLARKE's interesting paper on this subject, as read at the Society of Arts, and now append the discussion which ensued:—

MR. CHARLES LOW said the subject of copper smelting is a most important one, as it embraces one of our largest manufacturing interests, and of all others it is a manufacture that has had the fewest improvements carried out since its first commencement than any other in this progressive country,—in fact, it may be said that since its first introduction little or no permanent improvements have been effected. This arises principally from two causes,—the first of which is, the copper smelting business is a complete monopoly, in the hands of about 10 individuals, who rule the trade, as regards the prices to be paid for copper ores and other matters, exactly as they think proper, and who are also extremely adverse to any kind of improvements being introduced into the manufacture of copper, and would throw every possible impediment in the way of such being carried out. The next difficulty is that although most important discoveries may be made in the laboratory, it is frequently the case that it would not be possible to carry them out in the large way, from the expense attending the process, or the impossibility of obtaining any permission to obtain the use of works to make the trials. It must be also borne in mind that the material to be operated upon is of great bulk, the matrix or gangue of the ores being so out of all proportion when compared to the quantity of metallic copper produced. The average produce of copper ores produced from English mines does not exceed 6½ per cent., and when the produce of the foreign copper ores imported into this country is added to it, the produce of the whole will not quite average 10 per cent., so that for every ton of fine copper produced at least 10 tons of ores must be smelted. From this it is obvious that to treat such vast bulk of materials the cheapest possible process must be adopted. From a description of the present process of copper smelting in the paper just read, it appears to be as nearly as possible the same as was carried on at one of the earliest copper smelting works, erected at Bristol upwards of 100 years ago. The ores are submitted to from seven to ten different processes, from the time they are first placed in the calcining furnace until they are produced from the refinery in the shape of fine copper, and this occupies ten days. Now, to carry out this long process it is obvious that the cost of coals, labour, wear and tear of furnaces, and other matters, is very great, and any improvement that would tend to shorten this is most important. Some attempts have been made for the reduction of copper ores by what is called the wet way,—namely, by means of acids; but this has failed from the cause I have just named, the bulk of materials to operate upon being so great, and, consequently, rendering the process too expensive. Having had much experience in metallurgy, and particularly copper smelting, I was induced to go into the matter very closely; and after ascertaining the exact effect required to be produced upon copper ores by submitting them to the present protracted mode of operation, then to ascertain whether some other method could not be used by means of the application of proper fluxes to effect the same object, and more economically. In the first place, what is the effect intended to be produced by the present method of smelting? It is chiefly to desulphurise the ores, and deprive them of the iron contained in them by oxidation. Well, this, as at present effected, is simply by heat, and carried out by means of a series of expensive processes. After much research, I discovered a plan of operations which completely obviated the difficulty, and for which process I obtained patents. The process I adopt is as follows:—I first calcine the ores in the ordinary way, and then introduce them, likewise in the ordinary mode, into a reverberatory smelting furnace and smelt them, and after skimming off the slags run out the metal into sand beds (not into water, as just mentioned in the paper read, which is useless). The metal I have now produced is a regulus. This I place in another reverberatory furnace, which is constructed with orifices on each side of the bridge of the furnace, to admit a current of air (for this improvement I also have a patent); the current of air passes between the flame and the surface of the melted metal, and impinges upon the latter, and greatly assists in the operation. I now introduce my fluxes, which consist of certain proportions of manganese, plumbago, carbon, and saltpetre, and the effect produced is that the iron, sulphur, and other substances are oxidised. The copper is set free and brought into a metallic state, and at the end of 12 hours is fit for the refinery, so that it enables me by this process to produce the finest copper in 36 hours, which by the ordinary process of copper smelting cannot be effected under ten days. The saving by this process of coal, labour, and other matters, must be obvious to all. The full particulars of my process, with ample directions how to carry it out, will be found in my specification of the patents at the time they were taken out. I should wish you to understand that my description of the process is not merely theoretical, but was carried out by me upon a very large scale, and many thousand tons of fine copper made by it. In conjunction with a party of friends, I erected large copper works near Swansea, and fully carried out the process, and it was found that the copper produced was of unequalled quality, and sold in the market 2d. or 3d. per ton higher than the finest copper produced elsewhere, and the cost of smelting the copper ores by this process was 50 per cent. less than by the ordinary method. I need not inform you that our success brought upon us the opposition of the monopolists, and every attempt was made to drive us out of the trade, and of course at last with success. The price of copper was lowered to an unprecedented extent, and the price of ores raised, so that it was quite impossible to continue our operations, except at a loss; and in order to prevent our losing the whole of our capital in a useless competition with those who could afford to lose for the time 20 times the amount, and afterwards make the miner pay for it, we determined upon discontinuing operations, but not until the question had been fully proved, and the success of the process completely established. I mention the fact of the success of this improvement more for the purpose of showing how much may be done towards a cheap production of copper; and I believe it to be but a small step towards further chemical discoveries to effect far greater successes. I cannot help remarking upon the lamentable position in which one of our most important industrial and commercial interests is placed by the existence of this most monstrous monopoly,—namely, our mining interests, with their large capital invested, and considerable risk, as there always must be, attendant upon mining operations, and when successful that they should not receive a proper remuneration for their labours, but at the mercy of certain parties to give them any price they may think proper for their ores. According to a calculation I have just made, I find that the profit made by the copper smelter upon every ton of fine copper produced is 40%, after paying all charges; and as the quantity of fine copper produced in this country per annum exceeds 30,000 tons, I leave you to calculate the princely revenue that accrues to the monopoly. But there is a remedy that could easily be adopted to meet the difficulty. Let a few influential miners combine to smelt their own ores by a cheap process, either in Cornwall or elsewhere, and the monopoly would soon be at an end. The smelters would still have ample profits, and the miner receive a proper and just remuneration for his outlay of capital and perseverance.

MR. J. ARTHUR PHILLIPS, having been requested by the Chairman to give some information relative to the various humid processes employed for treating copper ores, remarked that the most simple practical method with which he was acquainted for obtaining copper from its solutions was that employed at Rio Tinto, in Spain, the Parys Mountain, in the Island of Anglesea, and some other places. In these localities the water issuing from the mines becomes, by the oxidation of copper pyrites contained in the veins, more or less charged with sulphate of copper, from which the metal is obtained by the introduction of scrap iron into reservoirs containing the cuprous waters. By this means the metallic copper is precipitated, and sulphate of iron formed—the former being collected for subsequent metallurgical treatment, whilst the latter is usually allowed to escape as a waste product. The poorer sulphides of copper are also frequently oxidised by calcination in heaps, and the sulphate of copper formed, after being removed from the associated insoluble matters by lixiviation, and treated as above described. The Sinding process was invented by Mons. Sinding, a Norwegian copper smelter, in order to supersede the use of iron for precipitating copper in the treatment of poor ores by the wet way, in cases where fuel for smelting is scarce, and a suitable proportion of rich ore is not at hand, as happens in Norway, the Island of Anglesea, and in some other localities. This invention consists in a new way of preparing sulphurated hydrogen, by means of which the copper is precipitated as a pure sulphide. The method of roasting and washing out of the ores is the same in Sinding's process as in the old methods of making cement copper, as in Bankart's and other processes. Sulphurated hydrogen is made from fuel and ordinary mundic. The fuel may be any that will give off hydrocarbon gas when distilled. The reaction that takes place is between sul-

phur vapour from the mundic and hydro-carbon gases from the fuel. When these are brought in contact with each other at a low red heat the hydrogen combines with the sulphur, and the carbon is deposited as a fine black powder. The furnace for making the gas consists of two divisions. The first, a deep square chamber, where the fuel is distilled, is about 2 ft. square and 8 ft. deep, and at the bottom has a blast-pipe, by which air is blown in. The top of this chamber, or gas-generator, as it is called, is covered by an iron box, with a sliding top and bottom, by which fuel is introduced, without allowing any escape of gas. Sinding's original generator was more complicated, having the blast-pipe high up, and the lower part of the generator smaller than the upper, in order to make the fire burn downwards. This apparatus was for wood; for coal the simpler arrangement first described is used. The generator communicates with the second chamber by a short horizontal canal in the upper part of the generator, and in this air is mixed with the gas in regulated quantities by means of a blast-pipe with stop-cocks. The second chamber, which contains the mundic, is nearly a cube, about 8 ft. each way, the roof being slightly arched. This chamber has openings in the bottom, by which the gas formed passes off to the precipitation chambers. These openings are covered by a brick roof, to keep the mundic from filling them. There are also openings at the two sides of this chamber for drawing out the spent mundic, and one in the end for charging fresh sulphide. The furnace is worked as follows:—The generator is filled with fuel and lighted. The blast coming in at the bottom supports combustion, and the carbonic acid formed is reduced in passing up through the column of fuel. The fresh fuel on the top is distilled by the hot gases passing through it, and gives off hydro-carbon gases. The gas that passes off from the generator is a mixture of carbonic oxide and hydro-carbon gases. On meeting with the blast in the canal, a portion of the gas is burnt, and it is essential that only a part of it should be consumed, the object being to get sufficient heat to distil sulphur from the mundic, but, at the same time, to leave sufficient gas unburnt to form sulphurated hydrogen. By regulating the blasts in the generator and canal, the mundic chamber is filled with a sheet of flame, so smoky as to give little or no light. By this means the mundic is heated to low redness, sulphur distils off, and the smell soon indicates that sulphurated hydrogen is present in large quantities: 1 ton of mundic should give about 5 cwt. of sulphurated hydrogen gas. The mundic used in the furnace may be that from which the copper is obtained, since it is not wasted in the manufacture of the gas, but rather prepared for the process of roasting. The precipitation of copper is conducted in an air-tight wooden chamber, divided into compartments, so that the gas which enters at one end must pass in a zigzag direction through the whole chamber. The top is formed by a tank, into which the solution of copper is pumped. The bottom of this tank is pierced with small holes, by which the solution trickles through the gas, and there becomes blackened and thickened by precipitated sulphide. The solution now runs out at the bottom, and is again pumped up, and so on until the precipitation is complete. It is then run off into pits, where it settles; the clear liquor is let off, and the precipitate dried. This is run down in a furnace, and gives a regulus yielding 70 per cent. of copper, and from which fine copper can be made in one operation. The solution usually contains iron, and, consequently, should not be much exposed to the air previously to precipitation, as the iron salt becomes peroxidised, and much gas is wasted in reducing it to the state of protoxide. This process has been in successful operation for some five years near Fulda, in Norway, and yields a handsome profit. At Linz, on the Rhine, the poorer sulphides of copper, containing from 1 to 5 per cent. of that metal, are treated by the following process:—The ores coming directly from the mine, and without any preliminary dressing, are first roasted in a double-soled furnace, and then taken to a series of tanks sunk in the ground, and lined with basalt. These tanks are also provided with a double bottom, likewise formed of basalt, so arranged as to make a sort of permeable diaphragm, and on this is placed the roasted ore, taking care that the coarser fragments are charged first, whilst the finer particles are laid upon them. The cavity thus formed between the bottom of the tank and the diaphragm, or false bottom, is connected by means of proper flues, with a series of oblong retorts, through each of which a current of air is made to pass from a ventilator, or pair of large bellows, set in motion by steam or water-power. In order to use this apparatus, a quantity of ore is roasted in the reverberatory furnace, and subsequently placed in the tanks, taking care that the first layer shall be in a coarser state of division than those which succeed it. The retorts, which are formed of fire-tiles, and about 6 in. in height by 1 ft. in width and 6 ft. in length, are now brought to a red heat, charged with blonde, and the blast applied. The sulphurous acid thus formed is forced by the draught through the flues, where it becomes mixed with nitrous fumes, obtained from a mixture of nitrate of soda and sulphuric acid, and ultimately passes into the chambers beneath the diaphragms, on which are laid the roasted ores, which must be previously damped by the addition of a little water, of which a small quantity is also placed in the bottoms of the tanks. The sulphuric acid thus generated attacks the copper formed during the preliminary roasting, giving rise to the production of sulphate of copper, which percolates through the basaltic diaphragm into the reservoir beneath. The liquors which thus accumulate are from time to time distributed over the surface of the ore, until the greater portion of the copper is extracted, when, by shifting the damper, the gases are conducted into another tank, similarly arranged. The liquors from the first basin are now pumped into the second, and the operation continued until the ores which it contains have ceased to be acted on by the acid. When sufficiently saturated, the liquors are drawn off into convenient troughs, and the copper precipitated by means of scrap iron. The sulphate of iron thus formed is subsequently crystallised out, and packed into casks for sale. On removing the attacked ores from the tank, the finer or upper portions are thrown away as entirely exhausted, nearly the whole of the copper having been removed from them, whilst the coarser fragments are crushed and re-roasted, and finally form the upper stratum in a subsequent operation. It has been found that, by operating in this way, ores yielding only one per cent. of copper may be treated with considerable advantage, since the sulphate of iron produced, and the increased value of the roasted blonde, are alone sufficient to cover the expenses of the operation. At a short distance from the village of Twista, in the Waldeck, several considerable beds of sandstone, with green carbonate of copper, have been long known to exist. Although varying considerably in its produce, this ore, on an average, yields 2 per cent. of copper, and was formerly raised and smelted in large quantities; but this method of treatment not having, apparently, produced satisfactory results, the operations were ultimately abandoned. The insoluble nature of the granular quartzitic gangue, with which the copper is associated, suggested, some three years since, to Mr. Rhodius, of the Linz Metallurgic Works, the possibility of treating these ores by means of hydrochloric acid, and a large establishment for this purpose has ultimately been the result. These works consist of a crushing-mill, for the reduction of the cuprous sandstone to a small size, sixteen dissolving tubs, and a considerable number of tanks and reservoirs for the reception of the copper liquors, and the precipitation of the metal by means of scrap iron. Each of the sixteen dissolving tubs is 13 feet in diameter and 4 feet in depth, and furnished with a large wooden revolving agitator, set in motion by a run of overhead shafting in connection with a powerful water-wheel. This arrangement admits of the daily treatment of 20 tons of ore, and the consequent production of from 7 to 8 cwt. of copper. Each operation is completed in 24 hours, the liquor being removed from the tanks to the precipitating trough by the aid of wooden pumps. The ore is stopped and brought into the works at 4s. per ton. The acid employed at Twista is obtained from the alkali works in the neighbourhood of Frankfurt, contains 16 per cent. of real acid, and costs, delivered at the works, 2s. per 100 lbs. Each ton of sandstone requires 400 lbs. of acid, which is diluted with water down to 10 per cent. before being added to the ore. Every ton of copper precipitated requires 14 ton of scrap iron, at 4s. 5d. per ton. It is probable that this extremely simple process of treating the poorer carbonates and oxides of copper may be practicable in many other localities; but in order to be enabled to do so with advantage, it is necessary that the ore should be obtainable in large quantities, at cheap rate, and that it should contain but little lime, or any other substance than the ores of copper soluble in dilute hydrochloric acid. It is also essential that the mine should be in the vicinity of alkali works, in order that a supply of acid may be obtained at a cheap rate, and also that scrap iron be procured in sufficient quantities, and at a moderate price. In conclusion, Mr. Phillips also described and made some observations on the large deposits of black sulphide of copper which have been recently discovered in Tennessee and Virginia, United States of America, and expressed an opinion that they were the result of decompositions of a secondary nature, which were, in all probability, still actively progressing. Mr. Phillips further observed that Capt. J. R. Pill, who had had better opportunities of making himself acquainted with these formations than almost any other equally competent person, was the first to discover the escape of sulphurated hydrogen from

these deposits, and that he (Capt. Pill) fully concurred in the opinion that they were the result of the decomposition of the salts of copper through the agency of that gas.

MR. MURCHISON said that he was not connected with the copper smelting trade, but he knew enough of the subject to perceive that Mr. Clarke had brought it before the Society in an able and lucid manner. Mr. Clarke made a remark which it was important to find confirmed by an extensive copper smelter who had spoken this evening. He said that copper smelting was at present a routine work, pursued on much the same plan as of old, and on the same general system in most of our works, followed out as a mechanical practice rather than as a scientific occupation. He (Mr. M.) remembered reading an article on free trade in a public journal a few years ago, in which the writer expressed an opinion that the time was not far distant when a protectionist would be so rare and curious a creature, that if one were then met with, his appropriate place of residence would be the British Museum. He feared that the writer of that remark forgot the copper smelter, who had adhered to the antiquated plan of carrying on his trade, regardless of the improvements which the encouragement and advancement of science had enabled other manufacturers to bring their articles to a degree of perfection which had raised the commercial position of this country to its present pinnacle of greatness. It was about the year 1708 that the first piece of copper was made in Cornwall, at a place called St. Austell, by Sir Talbot Clark, and two other gentlemen. It was not till about 1725 that the copper mines in that county began to return any quantity of ore, being in that year, probably, about 5000 tons. In 1750, the quantity had increased to about 10,000 tons of ore. In 1754, copper smelting works were erected in the parish of Camborne by Sampson Swaine and others, and these were subsequently removed to the neighbourhood of Falmouth. They met with much opposition, but overcame it and flourished. Other attempts were made to establish works, which failed more from want of capital, bad management, and improper situations, than from the means and cost of obtaining fuel. In 1800, the produce of the Cornish copper mines had increased to about 56,000 tons of ore; and they were now (together with that for Devon) about 190,000 tons. Mr. Clarke had remarked that the working of the Cornish mines might be threatened by the importations of rich ores from Chili and Australia; but the fact was that the British mines had been greatly falling off lately in their production of copper. In 1857, the Cornish and Devon mines yielded 1346 tons of fine copper less than in 1856; and in the first nine months of 1858, about 450 tons less than in the corresponding period of 1857. This was not caused by the British mines being forced to return only their richest ores, for the average produce of the sales had been declining,—in 1850, it was 7½; in 1853, 6½; and, in 1858, 6½ per cent. The British and foreign ores sold at Swansea in 1853 amounted to 29,244 tons of ore, of 14½ produce, giving 4362 tons of fine copper; and in the year ending June 30, 1853, 36,691 tons of ore were sold, of the average produce of 14½, and yielding 5240 tons of fine copper, showing an increase of 878 tons of fine copper. A gentleman who had spoken had remarked that he believed the mines would do well if they smelted their own ores. About 100 years ago the largest copper mine then opened in Cornwall not only calcined its poor ore, but also smelted it into regulus. But this was soon stopped, for the ore buyers would not give them so high a standard as they did to others, in order to discourage them; and because it deprived them of part of their profit. From Cornwall the smelting trade was carried to Bristol, but the double carriage of the ore and the fuel to that place soon took it to Wales, where it was established at Swansea and Neath. Mr. Murchison then remarked that he had been a member of the Society for many years, and could say that Mr. Clarke's paper was one of the most practical and useful that had been brought before it. He hoped it would lead to a thorough consideration of the subject, and that the Society would be induced to encourage practical men to suggest improvements in the process or processes of copper smelting. Mr. Murchison concluded by moving the thanks of the Society to Mr. Clarke for his able paper.

[We shall next week give the speeches of Mr. John Bethell, Mr. P. L. Simmonds, Sir T. Phillips (Chairman), and the reply of Dr. Hyde Clarke.]

## MINING IN IRELAND—ROUGH NOTES.—No. VI.

Having commenced our journey at Bantry, and returned to it again, we now proceed with a description of our route across the Priest's Leap into Kerry, which, with a small portion of the county Cork, forms the south-western extremity of Ireland. The drive from Bantry round the head of the bay, which is deeply indented, is pleasant and interesting, and the tourist who likes walking exercise will find a short cut into Kerry by crossing the mountain known as the Priest's Leap, from the top of which there is a magnificent view of Bantry Bay, the Kenmare River, and the mountains of MacGilly Cuddy's Reeks, the highest mountain in Ireland, it being 3410 ft. above the sea level. The Priest's Leap divides the counties of Cork and Kerry, and, according to tradition, St. Feocna, an Irish saint, some hundreds of years ago, in the 5th century, it is said, when being pursued and driven by his persecutors out of Kerry, was nearly overtaken on the top of the Esk Mountain, and in order to escape from his enemies performed a miracle, by making the mule which he rode leap from the Esk Mountain to within a mile of Bantry—a distance as a crow would fly of 10 miles. Hence the origin of the name of the Priest's Leap. St. Feocna, it appears, a few days previously to his being driven out of Kerry, was applied to by a farmer, who resided at the north side of the Esk Mountain, to prevent a woman, his near neighbour, from stealing his milk and butter; and as she would not desist from her dishonest practice, the saint, by a miracle, turned the milk, churn, and rolls of butter into stone, which our guide pointed out to us, stating at the same time that this wicked woman was turned into a pillar of rock, and the stick she held in her hand, by the same process, was converted into a whitethorn tree. The pillar and tree may now be seen near the ruins of an old church, dedicated to the memory of St. Feocna. The country people to this day believe that any person attempting to remove one of the rolls of butter would be immediately struck blind. We saw, however, the rolls of butter taken away, and, if we are not mistaken, they may now be seen in the Museum of Trinity College, Dublin, and we believe the authors of the sacrifice have not yet lost their sight. Similar traditions were at a remote period of history current in the south-west of England, and near Liskeard are three circles, very near each other, formed by erect stones placed at some distance. Popular superstition has attached to this monument a legend that the blocks were once men, transformed into stone as a punishment for engaging in the sport of hurling on the Lord's-day: hence the name given to this monument of "The Hurters." A similar legend is attached to a monument in the parish of St. Buryan, where nineteen maidens are said to have been turned into stone for dancing on the Lord's-day. Previous to the year 1824 the only carriage road from Kenmare to Bantry was across the "Priest's Leap," and at either side of the Esk Mountain the rise is about 1 ft. in 4. Since then, however, an excellent road has been made through the valley of Bonane, and a tunnel 200 yards in length cut through the Esk Mountain ridge, and from thence it winds round the hill into the beautiful valley of Glenariff, where public conveyances run every day, from May 1 till October, to Killarney. From the old ruins of St. Feocna's Church to Kenmare, we passed through the valley of Bonane, and close by a river of the same name. In this river the disciples of Isaac Walton may find plenty of amusement, as it abounds in salmon and trout of the finest description. The coast of Kerry, which is bordered by the Atlantic, is deeply indented by the estuary of the Kenmare River and the Bay of Dingle, which penetrate into the mainland about 30 miles in an easterly direction. The peninsulae intercept between these arms of the sea occupied by the western extremities of the mountain system, which, commencing in the County of Waterford, extends with little interruption across the entire south of Ireland. The mountains of Bear and Bantry, spreading from the south-western boundary of Cork across the south of Kerry, occupy the district between Bantry Bay, the river of Kenmare, and Dingle. At the head of the River Kenmare, which is in fact an arm of the sea, is a long and narrow valley, which is watered by the Roughty, the most considerable stream that falls into the Kenmare estuary. The town of Kenmare is situated at the lower extremity of this valley in a fertile tract, from which the Glanmeara mountain rises towards the north to a height of 2550 ft. above the sea level, a short distance south of the town, the River Roughty, at Nileen Sound, is crossed by a hand-suspension bridge, towards the erection of which the Marquis of Lansdowne contributed 32000. The marquis also contributed largely in building a good pier at the head of the harbour, alongside of which vessels of 250 tons can load or discharge their cargoes free of charge. The scenery about Kenmare, and on the banks of the Roughty, is very beautiful; the locality is well wooded, and numerous tasteful villas on each side of the river complete a diversified and charming picture.

The geological structure of the chief mountain chain we have alluded to is similar to that of the mountains in the west of Cork, the main components being grey and red clay-schist, large quantities of quartz, and overlaid in the low districts by beds of limestone.

The Roughty Valley, which is about twelve miles in length, and varying in breadth from half a mile to one mile, is composed of compact slate-form limestone; it has a vitreous fracture, with a slight dip towards the south, but we could discover no traces of marine shells or remains; we found abundant traces of galena in the limestone, also remains of extensive ancient works.

Iron and copper mines have also been worked since a remote period in this locality; and Glanmeara, which forms part of this valley, appears

by some verses in Nennius, has been celebrated for its mines since the ninth century.

The works, however, appear to have been of a superficial character, and although the openings are of some miles in extent in an east and west direction, yet the excavations do not appear to have been made to any great depth, owing probably to a want of the knowledge of machinery.

The Roughty in this direction is fed by many large tributary streams, and water-power, we fancy, may be applied to an unlimited extent in the development of those ancient mines.

The geologist, the antiquarian, and the capitalist, may find ample scope for their several pursuits in the Roughty Valley; the former, we presume, would find objects of a highly interesting nature, and the latter would, no doubt, find something in which he might safely and profitably invest his money.

CURIOS CALCULATION.—The amount of coal raised annually in Great Britain is 68,000,000 tons. Now if they were extracted from a mine 6 ft. high, and the place driven 12 ft. wide, the excavation would be 5128 miles 1090 yards in gallery extent.

Or if formed into a solid globe the diameter would be 1549' 9 ft.

Or if piled into a square pyramid whose base was 40 acres, or equal to four times the area of Whitehaven cemetery, they would reach to the enormous height of 3356' 914 ft.—J. ELLWOOD, collier, Moss Pit, near Whitehaven: *Whitehaven Herald*.

## Original Correspondence.

## PRACTICAL MINING—SYPHONS.

SIR.—For the information of your correspondent, "A. B.," of last week, in reference to the above subject, I beg to say that we have had several syphons at work in this mine for many years, and find them invaluable for raising water from shallow depths.

First, then, we have found by experience that 27 feet is quite depth enough upon which to reckon the syphon to continue working and drain effectively; and this is at sea level—a mine at a greater altitude would no doubt require less, according to the elevation; the depth of the longer leg of the syphon—or fall, as we call it—must, of course, be more than that required to be drained. The length of the horizontal pipe does not materially affect the action of the syphon, if the joints are perfectly air-tight. To set the syphon at work when idle, we provide a small hand-pump worked with a brake staff, communicating with the syphon by a branch pipe somewhere on the horizontal part; this greatly facilitates the filling, or starting of the syphon to work—any mine carpenter or pitman can rig such a pump in a few hours out of any piece of waste 4-in. or 5-in. water steam pipe, 2 or 3 feet long, with wooden clack—not porous wood, lest it takes air. Every joint in the syphon and connecting pump should be air-tight; if there be any doubt on this point, let them be lapped with tarred flannel, and smothered over with clay. I prefer lead pipes to iron, from its flexibility in bending around the prominent parts of levels, &c., &c., from the fewer joints necessarily presented by it, thereby lessening the risk of imperfect action. The price of 1-in. thin lead pipes at the manufacturers at Chester is from 1s. to 1s. 3d. per yard, not very expensive certainly; and lastly, if possible, the pipe should be kept out of the way of being damaged by blasting, wheelbarrows, wagons, &c.; it is a good plan to bury it on one side of the level.

In the management of the syphon, the size of the pipe should be adapted to the quantity of the coming water; it is best to keep it in constant, full supply, and to do this we sometimes turn small streams of water into the dam, or fork, to keep up the supply. We sometimes have, also, two or more branches drawing from so many different forks, but all connecting with one main pipe, regulating their relative action by stop-cocks; but these are more complicated, and require more attention than the simple single one, which I would recommend for general use, increasing the number of single ones as may be required.

In conclusion, I have no hesitation in recommending them to the use of the mining world, as I believe they may be used of any size required to keep water from the shallow depths named; such as forks to drain slopes that are not unwatered by levels and sinks in the undulating beds of limestone, &c.—*Llandudno, Dec. 6.*

W. VIVIAN.

## THE SAN FERNANDO COPPER MINES, CUBA.

SIR.—Your last Journal contains a statement of what passed at a general meeting of the Royal Consolidated Copper Mining Company of San Fernando, Cuba; and seeing my name therein coupled with several equitably injurious assertions, I deem it necessary to give them a prompt and due answer. Without noticing the attempts at wit at my expense, and that of the Spanish character in general, I will at once proceed to a brief summary of the most important facts connected with the San Fernando Company. The fact of the mine having produced the sum of about one million dollars from comparatively small excavations, and that with a few hands it continued to be productive while in possession of Messrs. Arrieta, made it desirable for them to think on the formation of a company for working it on a large scale. Accordingly I, one of the Messrs. Arrieta, entrusted the realisation of the project to a Mr. Remington, on the recommendation of Mr. Bailey, of New York. I did so on account of Mr. Remington's proposal being considerably more favourable than that made by the house of Messrs. Morrison, of Havana, who offered to obtain for us 20,000/- cash and a third part of the shares of the company, which they promised to carry out. Mr. Remington came to London, and having associated himself for the purpose with three other gentlemen, who, jointly with himself, constituted themselves as promoters, exacted from me the entire transfer of the property into their hands before the completion of the company; these gentlemen having long before, at their own exclusive choice and responsibility, sent out the well-known Prof. Ansted and Capts. Moyle and Northey to examine and report upon the mine. The company having been formed, we, the Messrs. Arrieta, received not 37,000/- in shares, as you would make it appear, but less than about half of that sum, having been obliged, by contract with the promoters at the time of the transfer of the property to them, to cede about the other half, to be employed by them as they thought fit.

Now, without mentioning many other very great disadvantages to which I have been the sufferer, and in order not to make this communication too long, I merely content myself with citing the fact, that though I received several offers at the commencement, I have not sold one single share, such was my confidence in the richness of the mine, and the trustworthiness of the reports of Messrs. Ansted, Moyle, and Northey.

Before concluding, allow me to explain why I used the phrase "spoiled article." What could I henceforth do with a property which publicly has been declared to be of no value, and for the development of which 20,000/- are yet required? After having experienced many heavy losses, and the sacrifice of about three years of my time, is it strange that I should refuse the offer made to me?

With regard to any mystery which you believe may exist in this matter, I shall feel most happy to give any assistance in my power. Believing in the sincerity of your declaration that you do not impute any improper motive to me, I beg you to give a prominent place to this communication in your next Journal.—*73, Piccadilly, Dec. 6.* J. J. DE ARRIBETA.

(It will be seen by the above explanations that Mr. Arrieta has been as much "sinned against" as he has stood in the position of appearing as the actor whilst the acts were done by others. There is certainly nothing legally chargeable against Mr. Arrieta—he having simply sold his property to the highest bidder, a course which every man adopts. That Mr. Arrieta had a good opinion of the property is proved by the fact that he has not sold a share, and his offer to assist in clearing up any apparent mystery is very fair, and will, doubtless, afford English capitalists an opportunity of learning how foreign mine proprietors are dealt with by professional promoters of joint-stock companies.)

## THE AUSTRALIAN AND NEW ZEALAND COMPANIES.

SIR.—Your correspondent in last week's Journal may be a "Metallurgist," but, if his observations really express his views, it is clear that he knows nothing of mining, or how to estimate the value of such property. Your correspondent can, of course, adopt his own mode of selecting his investments, but the public must not be misled by his specious reasoning, which is most fallacious and erroneous.

Your correspondent begins the data on which he proceeds, with a mis-statement. He names five companies, from which he says he selected those which had sold ores, and he adds that he "found" that one had sold ores in a calcined state at Swansea at 14*l* produce of copper.

What a clever person to find that which never happened! Not one of the companies mentioned ever sold any calcined ore at Swansea, or at anywhere else; except it be the North Rhine, which it appears did smelt some ore, to which only can your correspondent refer; as to the others, none of them have any means of calcining their ores.

Your correspondent then notices the North Rhine Copper Mine, which he says has sold one to 21 to 33 per cent., and on that ground (according to his letter) he says he purchased shares in it. Now, let us see how the matter stands.

I have referred to your Journal, and I find that of the mines mentioned by your correspondent, the only one which appears in Grylls's List for the year ending June 30 is the Great Barrier, which sold at Swansea in that time \$35 tons of copper ore for 48*l*, 12*s*, 6*d*, or 14*l*, 8*s*, per ton, during a period when the standard was very low. Parcels of ore from this mine have been sold as high as 20*l*, to 25*l*, per ton, and the total quantity realised has been about 1500 tons for about 21,900*l*, while it is stated that very much larger returns can be made when the mine is taken possession of by the company, and worked more vigorously. The advantages to be expected may be judged of from the fact that the present temporary lessee has been giving one-third of the gross returns as royalty for several years past. This royalty belongs to the company from April, 1856. In Grylls's Annual List I do not see any of the following mentioned:—Bon Accord, Scottish Australian, Dum Mountain, nor North Rhine, though they may be included under "sundry small mines." I believe the Dum Mountain sold a few tons, but I am told the whole quantity realised from that mine is only 20 tons, at 16*l*. per ton.

The first time the North Rhine appears in the Ticketing List is on the 23*rd* of last month, when 5 tons were sold for 27*l*, 2*s*, per ton. There were then 2 tons advertised for sale on the 23*rd* of that month, but on the day of sale they do not appear, unless the 2 tons sold that day at 19*l*, 1*s*, per ton, under the name of "Australian" are the same. From a correspondence I have lately seen in the papers, it appears that 100 tons were formerly sold from the North Rhine, but the amount is not stated.

Now, Sir, I would be guided in my estimate of the value of a mine more from the quantity of ore it produced than from the produce of samples or small parcels. The mine in this country which pays the largest amount in dividends yields, I believe, the lowest quality ore. Then, again, I would look to the land carriage, which is one of the greatest drawbacks to most of the foreign and colonial mines. Your correspondent says that only one of 17 per cent. can be brought profitably to England from Australia. Most of the mines in that colony are a considerable distance from the port. The Great Barrier has no land carriage at all, but is close to the coast, and the workings are carried on into a high hill, so that no pumping machinery is required for years, giving the greatest facilities for cheap working.

Your correspondent says that "the climate of South Australia is known as far superior to that of any other colony." He "took occasion to ask particulars" about the richness of the Burna Burna, "and I would advise him to do the same about the climate, and he will find it is not known to be quite so 'superior' as he makes it to be thought. My information, from the most authentic sources, is that the climate of New Zealand is better, and that invalids are often sent there from Australia for the benefit of their health. I recommend your correspondent to go there also, for the benefit of his knowledge of its climate and mineral resources."

I cannot conclude these remarks without noticing an article (evidently communicated to you) which appeared in your Journal the week before last, in which the writer speaks of the "success which has been attained" by the Bon Accord, North Rhine, and Scottish Australian Copper Companies, and to which he points with evident self-gratification. I want to know in what the "success" consists? Is it that the proprietors and promoters have "succeeded" in selling to the public 5774 acres of land in a distant colony (and from which they say a total of 105 tons of copper ore have been realised) for the sum of 74,000*l*, and in two cases a royalty on the ore besides? The shareholders have yet to learn what success they are to have. We can remember the "success" which attended the Nova Scotia Company, and numerous other projects, a few years ago, which were got up to good premiums, and no doubt were advantageous to some persons.

The writer of the article alluded to says, "with respect to the Bon Accord, it is reasonable to suppose, from its locality (close to Burna Burna) and indications, that when ore is produced it will likewise be rich." Seeing that the richness of the ore is the great point dwelt on (and, perhaps, it is the best to serve his object), the question of quantity not being a convenient topic, I would have supposed that "Metallurgist" had had something to do with the article, were it not that he remarks, "it is only necessary to keep a sufficient distance from the Burna Burna Mine basin, which has absorbed all the copper adjacent, to ensure success." This is poor consolation for the Bon Accord shareholders, who are reminded in one case that they have found no ore; and in the other, told that they are not likely to do so. There is one thing, that although they have paid 24,000*l*, for their 347 acres, they will not have *royalty* to pay if they raise no ore. Again, we are told that another of the successful companies is in New South Wales, "which has been distinguished more for its production of gold than of copper, and that it is still a virgin mine;" which means, I suppose, that the happy shareholders will get 5060 acres of land for their 30,000*l*, and pay 15*th* royalty on what ores they find.

Finally, it is stated that "the Burna Burna ore returns on the average from 22 to 24 per cent. of pure copper," being, of course, the *average* of its immense returns. But we are then told that "recent produce from the North Rhine (wonderful concern!) has given as high as 29 per cent.," the inference intended to be conveyed being, that the ores of the latter mine are richer than those of the Burna Burna, the North Rhine having lately sold 3 tons of 29 produce, and 2 tons of 22*l*! This is nothing less than the *sugestio falsi*, and it is a pity that any respectable undertaking should have a supporter resorting to so contemptible a means of explaining its merits.—*Dec. 8.*

INVESTIGATOR.

## AUSTRALIAN MINING COMPANIES.

SIR.—You last week had a short article on the *success* of Australian copper mining companies. To me, as a shareholder, the term seems inapplicable to companies which have hitherto only received their capital, and paid vendors and promoters. Pray remove the impression created in my mind, and no doubt also the large class of your readers, by inserting this as an inclination you only intended to imply that the companies were successful so far as they had progressed. Your article concluded with rather a bilious quotation as to envy, hatred, and malice. Well, Mr. Editor, it is enough to make the mouth water of all who have mining sets to dispose of to find, from a valuable letter in your Journal, that the three companies you allude to have paid for purchase of their sets nearly 80,000*l*, and the merits of which you graphically describe (no doubt correctly)—one as situate where gold is more likely to be found than copper, another as having produced some ore of 29 per cent., and the third as likely to be rich, when ore is found. I recollect, some years ago, being a shareholder in what was then called a successful Australian Mining Company, which possessed some 20,000 acres. A sample (a huge mass of copper ore) was placed at the entrance of the doorway of the offices. Oh! how I looked at that sample every morning, as I passed on my way to the City, and conjured up the dividends I must receive when the bulk came to hand. It has not come yet; however, *nil desperandum*. You say "there's a good time coming," and that is some consolation, although you state the reports are almost fabulous, and come "from the North."

Dec. 1.

A SHAREHOLDER IN NON-DIVIDEND MINES.

## THE PNEUMATIC IRON AND STEEL PROCESS.

SIR.—The letters of "Truth," and of "One Interested," in your last two Journals, have met with considerable notice here, following so closely upon the successful reports of the Bessemer process at their works here and in Sweden. The general opinion is decidedly in favour of an amalgamation of the contending interests, as it would be felt a source of great annoyance if the works just erected by Messrs. Bessemer and Co. should be stopped or interfered with by a legal process at their outset.

The iron and steel trades have difficulties enough to contend against in the general competition, especially when developing new processes, without the ruinous interference of the law; and it would be little less than a national calamity that inventions giving so much promise should be unnecessarily retarded for want of a little circumspection and forethought on the part of the principal actors in the matter. Three years and upwards of the patents have already expired, without benefit to the inventors, of what has become notorious as the pneumatic treatment of fluid iron as it flows from the blast furnace; the result, no doubt, chiefly of the dread felt by capitalists to risk money in carrying out patents so avowedly open to contest as those patents have been from their birth, and yet, perhaps, never was so great a thing gained in this country with so little liability to infringement by third parties—that great bugbear of patents in general. What then prevents the inventors reaping the benefit of their inventions? Merely that want of union which gives strength. Let, then, the contending parties join issue. There is ample fortune for both, and may be made immediately available. What a noble opening for the Peace advocates. But will the lawyers permit it? that's the rub. Unfortunately there are other interested parties besides the inventors, and it will require a stern resolve on the part of the latter to follow the right path.

In the event of Messrs. Bessemer and Martien being so fortunate as to come to terms, I would advise them to endeavour to effect an arrangement so as to obtain, if possible, the co-operation of Mr. J. B. Howell, of this town, the inventor of the celebrated "Homogeneous Metal." I have no authority to suppose it possible, but merely throw out the hint, from a conviction that the combination would, if properly organised, be of great service to the mining world. Few men are so practically acquainted with steel in all its stages and varieties as Mr. Howell; and the celebrity already obtained by his "homo-metal" is a strong position to start with. Only a sufficient quantity of fluid steel can be obtained with any degree of certainty.

Such, Sir, I consider the prospects of these gentlemen, if they can only resolve to take advantage of them. Can it be possible they will permit false pride, or anything else, to interfere between them and their just and obvious rights, and so deprive themselves and their families (to say nothing of the public, who, I maintain, have a strong voice in the matter) of the accruing benefits? Let us hope they will be wiser, and show a better example to all future belligerents, whether national or individual, political, ecclesiastical, or commercial.

Patents are not granted for the purpose of obstructing but to aid progress. Inventors and patentees are merely stewards, or trustees, for the time being, and should be expected to give a good account of their stewardship.

Mr. Mushet must not think I have omitted his name in connection with this subject. With regard to any mystery which you believe may exist in this matter, I shall feel most happy to give any assistance in my power. Believing in the sincerity of your declaration that you do not impute any improper motive to me, I beg you to give a prominent place to this communication in your next Journal.—*73, Piccadilly, Dec. 6.* J. J. DE ARRIBETA.

(It will be seen by the above explanations that Mr. Arrieta has been as much "sinned against" as he has stood in the position of appearing as the actor whilst the acts were done by others. There is certainly nothing legally chargeable against Mr. Arrieta—he having simply sold his property to the highest bidder, a course which every man adopts. That Mr. Arrieta had a good opinion of the property is proved by the fact that he has not sold a share, and his offer to assist in clearing up any apparent mystery is very fair, and will, doubtless, afford English capitalists an opportunity of learning how foreign mine proprietors are dealt with by professional promoters of joint-stock companies.)

## THE RIVAL STEELMAKERS.

SIR.—It must be satisfactory to your correspondent "Truth" to see the cause he advocated so well received by at least one of the interested parties, as reported in your Journal of Saturday last. There is little doubt, but that ample capital will be forthcoming to establish a first-rate business on the patents obtained by Messrs. Martien and Bessemer, if they will settle their differences, and bring their talents and influence seriously to the subject; and the very fact of their receiving paid-up shares in a limited liability company would increase public confidence in their operations.

With due respect to Mr. Mushet, I must confess I am unable to find him a secure footing with these parties. After reading his patents, and comparing them with those of Messrs. Martien and Bessemer, it strikes me they can effect all he describes and claims, either through their own patents, or at all events combined with what was before well known. There may, however, be some system of manipulation peculiar to Mr. Mushet (as a practical man), on which he may fix a price. There may also be many other valuable secrets worth notice in due season, but the first thing to be accomplished is the arrangement between those who claim the fundamental points of the process, and which I sincerely hope, both for themselves and the public, will be—

Sheffield, Dec. 6.

PACIFIC.

area of the valve. What, then, should be done, so as instantly to liberate this sudden accumulation? Simply increase your means of exit. I find the last-mentioned means are being adopted at the Monway Iron-works, near Wednesbury. They are fixing on one of their boilers a 6-in. and a 12-in. safety-valve; on another is a 6-in. and a 15-in. safety-valve; and this is to be similarly mounted, in addition to which there are two 6-in. valves attached to steam-pipes. Here then, the means of escape for any sudden generation of steam or gas is ample. Another important point in the making of steam-boilers is that in constructing them manufacturers cannot place the plates so as to give grain, or fibre, of the iron in every direction. Boilers should be, therefore, carefully strengthened by artificial means, so as to make the strength comparatively uniform. At the iron-works above-mentioned, I find a belt of iron, 6 in. broad and 1 in. thick, is placed round their boilers (longitudinal). The belt being securely riveted to the boilers just above the fire line, and under the water line, giving as it were not only an abutment for the two halves of the boiler to spring from, but taking immensely from the pressure on the end of boiler. This point is of great importance, when it is taken into consideration how often the ends of boilers are forced or blown out, and the rivet holes broken off all around the circumference of the end of the boiler. Consequent, in a great measure, by the grain or fibre of the iron being in the wrong direction. Great credit is due, therefore, to the parties adopting the above precautions, for the protection not only of property, but what is of more importance, the preservation of human life. Sir, these few remarks are addressed through you to the ironmasters, coal-masters, and others concerned, and I doubt not but the importance of the subject will claim their attention.

VINDEX.

## SMELTING v. MINING.

SIR.—I have perused with great attention, from time to time, the several notices which have appeared on this interesting topic in the Journal. One great point, however, appears to have been forgotten—that is, the cost the miner is obliged to incur for raising the ores he has, as the incrustation is perfectly aware of the cost of sinking and driving through dead ground. Let the ore be 6 or 20 per cent., the smelter pays him no more money for it than the copper contained in it.

It will thus be seen that smelting is not a speculative undertaking, but a certain investment; the enormous profits gained by the smelters prove this. It may be well enough for the gentlemen at the Society of Arts to state that the monopoly ought to be abolished, and that it is unfair. No one can deny this fact. Some well-intentioned individuals have endeavoured to destroy it; what has been the consequence? not only have they succumbed in the attempt, but have been hopelessly ruined. The firms at Swansea, by putting on the screw, can do as they please, either in Cornwall, where they purchase the ores, or at Birmingham, where they sell the metal. They watch the markets, and act with union and combination, and are able to avail themselves of every favourable circumstance; they employ the best men, and when they find these incapable, or not fitting for their purpose, discharge them *sans ceremonie*; in fact, the system of rule there is a mild despotism. "The right man in the right place," as the late Emperor of Russia, despising red tape and routine, under whose withering influence our army was perishing, appointed General Totleben to defend Sebastopol.

Recent experience has shown that there is but little faith to be placed either in the honesty or good governance of public companies. I may, however, imagine a smelting association, formed with a capital of 500,000*l*, and an influential board of directors. The staff of that company will, without regard to merit or qualification, be comprised of gentlemen who are either relations, dependants, or hangers-on of the directors, and a few influential shareholders. If a rise or fall in the article—for instance, copper—takes place, they must have a board meeting, make a minute, and in the course of an hour or two all that has passed in the directors' room is known all over the City of London; and, as a natural consequence, buyers or sellers, as the case may be, are aware of the exact position of the company. In all trade operations secrecy is necessary, and this can never be attained at such an heterogeneous board as a public company of copper smelters would be. It is a mere question of capital. The majority of mines are but living from hand to mouth; they depend, in order to pay their labourers, on the money they obtain from the smelter. Let them subscribe a sufficient amount of capital, so as to enable them to hold over their ores—say, for three months—and the smelter would be obliged to give them a better price. It would be folly for one or two, or even a dozen, mines to attempt to do this; if anything is to be effected it must be done by a majority. They must know that among the monopolising firms the sacrifice of half a million of money is of no importance; if they ruin those who endeavour to make a stand their object is gained, and the apparently extravagant, though useful, outlay to them must again be repaid by their bondmen slaves and thralls—the miners. I do not, however, conceive that there will be found such union among those interested in mining as to form such a combination; it is necessary that a large capital should be raised, great patience exercised, secrecy preserved, and a true observance of the Cornish motto—"One and All."

As you have justly remarked, copper smelting is no longer a secret; the operations are simple and easy enough to the minds of practical men, and there is no reason why it should not be as effectually carried on in Cornwall as in Wales; but in order to effect this a different system of mine management must be inaugurated than at present practised. When this is carried out in all integrity, we may then anticipate a change, but until that period arrives, any relative alteration in the position of miner and smelter cannot be expected.—*Dec. 8.*

TIBICEN.

## OBSTRUCTION AND ANNOYANCES TO MINERS BY AGRICULTURISTS.

SIR.—Often as I have witnessed these proceedings in Devon and Cornwall, to which places I had supposed they were indigenous, the agricultural mind being rather obtuse, yet I find even here the same very amiable sentiment prevails. It appears Hodge is Hodge all the world over. I was present at a "scene" a few days since which afforded a rich illustration of the fact. On one of the mountains of Wicklow—a bleak mountain side, and a complete morass—mining operations have been commenced. The land for grazing sheep may possibly be about 1*l*, or 2*s*, per acre. There are no fences; nothing but walls of division to point out the different town lands

Emnor made choice of such an hour to visit the mine for such an object, for had he come in contact with Mr. Knight, the inventor, it is not unlikely that he would have received a chastisement which he would have resented for the remainder of his life, when departing from the truth in his communications to your Journal; and if no other good resulted from it, most likely your subscribers would be saved the pain of reading and commenting upon such conflicting remarks as those which have recently appeared in connection with cross-courses, mines, and quarries, with the name of N. Emnor attached. The explanation that Mr. Emnor has given on the subject of the Wheal Emma cross-courses, the subject, after the clear manner in which "Veritas" brought under view his contradictory statements, is preposterous, and although "One who can feel for Another," writing in your Journal of Nov. 27, has commented upon the "off-handed remarks of Mr. Hitchins," he does not relieve Mr. Emnor from the dilemma into which he has fallen, of making statements calculated to mislead those "who are too ignorant of mining matters to advocate their own cause."—*Buckfastleigh.*

F. B.

## THE SELECTION OF MINES.

SIR.—I cannot conceive from anything that appeared in my last letter how Captain Seymour has come to the conclusion that he had given "offence" to your correspondent, "Young Cornwall." Neither can I discover in that letter that I said I was a young geologist, or that I had referred him to the Carn Brea Mines. I did refer him to the Carn Brea district, without naming any particular mine, because he made a general sweep of the county; but to enumerate all those rich mines situated in the position he condemns would fill a large space in your valuable Journal to the exception. Now, your correspondent, "Mine Agent," have referred to so many instances throughout the country, I again quote Capt. Seymour's own words in referring to the position of mines:—"It is likely that lodes may present favourable indications in this position near the surface, but I have never witnessed one that has produced much copper. I find that the best position for a copper mine is south-east (from the hill), next to that east or south. In these three points are nearly all the richest mines in the country," &c. Now, this declaration from Capt. Seymour leaves but little room for the exception (in regard to "copper mines") now brought forward, and I most candidly declare that I desire from him that information which forms the groundwork of those statements which I quoted in my last letter, particularly as he has now declared himself "an old practical geologist," let Mr. Hemnor say what he may to the contrary.

That I am a practical miner he may discover by my last letter, and hope that my darkness (not as a theorist) may be enlightened by further communications from him in answer to that letter, for I desire that to trace back the *Mining Journal* for the last seven years in search of the writings and opinions of Captain Seymour (who has been pleased to term himself "an old practical geologist") respecting lodes, minerals, &c., must be a tedious task, which offers but little encouragement; especially as that seven years' labour (to judge from his late production) has been so productive of vague delusions. Yet, may I presume to hope that when he gives the information required that the force of practical knowledge may convince me of the erroneousness of the ideas I may have conceived previously respecting such matters; I, therefore, am open to conviction, and being one of a class of young men that desire to profit by the experience of our elders in the art of mining, I claim the indulgence of Capt. Seymour, and beg to subscribe myself again—

YOUNG CORNWALL.

## GREAT WHEAL VOR.

SIR.—The following statement of the quantity of ore raised by the old adventurers from this mine during the last six months, before the works were given up in July, 1846, may probably interest some of your readers. It is taken from the books of the mine, and gives good reason for believing that the small returns at present obtained from the stope are due to an accidental falling off of the lode, which may be reasonably expected to re-cover itself shortly:—

	Tons c. q. lbs.
January, 1846	56 7 1
February	48 19 2 23
March	48 19 2 19
April	71 4 0 11
May	56 16 2 19
June	51 17 2 17
July	46 5 1 13
Total	380 11 3 19
Average for seven months	54 7 1 18

FAIR PLAY.

## CAMEL QUARRY.

SIR.—Mr. Emnor must surely have known otherwise when stating that tram-wheels were attached to the wagons drawing the stuff out of the pit; and, if he wish it, Mr. Oatey will readily corroborate the statement of Captain Maylor to the contrary. Mr. Emnor, being once satisfied on this, will, I have no doubt, at once acknowledge his error. It will be quite unnecessary to reply to other portions of his letter, in which the public can have no interest. The only matter in which, in my opinion, they have any concern is that one more quarry is opened by a company who have the full power of working out their original intentions of opening up and carrying forward its necessary operations, even if the expenses in relation thereto have been far heavier than first anticipated. Mr. Emnor's original report on the quarry was made by him prior to commencement of the works, and when the pit was full of water; and he then reported:—"The rock risen from the quarry is fit to be converted into roofing-slates, doors, tanks, or any other purpose that is used for—its colour being a little darker than most Cornish slates, has a very pretty appearance; and, taking the nature of the rock, and the favourable position of the property into account, I state, without fear of contradiction, that this quarry presents every indication of proving more than an ordinary profitable investment for capital." His late statements, in your Journal and elsewhere, that the quarry was a fourth-rate one, and would never pay, &c., were made in spite, in consequence of a letter from Mr. Gilbert Forrester in regard to Pengenna Mine, and without having visited the quarry for a considerable time, and when he had never seen the discovery made a few weeks ago; so I think the opinions thus given cannot be of service to any one. In regard to the remarks of "T. A. Y." I would only observe that many merchants, builders, tradesmen, and others who have visited the Camel Quarry are astonished at the size (some 150 and 170 ft.), and quality of the slabs now being raised; and I am happy to say have verified their opinions by giving good orders. The opinions of such men, and their orders, are what we appreciate, and there can be no doubt every ton of stone that goes from the Camel Quarry is the means of one the less being taken from a quarry which has for a long time attempted to monopolise the Cornish slate trade. This fact has, it is well known, made persons connected with one other quarry in particular "wince" more than once. It is an old saying, "Rome was not built in a day;" and it is well known the Delabole State Quarries were not brought extensively before the public until within the last 20 years, although stated to be worked for centuries. But it is intended that the Camel Quarry shall be worked in a more enterprising manner, and at a greater and less expensive rate. Our townsmen, Mr. Forrester's, enquiries will now take so much of Mr. Emnor's time that I presume we shall be passed over.

Wadebridge, Dec. 8.

ONE OF THE CAMEL QUARRY SHAREHOLDERS.

## [ADVERTISEMENT.]

## THE NEWTOWARDS MINES.

SIR.—In reference to the discovery in these mines, whether by Richard Rickard, as stated in his letter to the deputation of the directors (Messrs. Dumbrell and Duff), which was published in your Journal of Sept. 25 last, or by Silas Evans, those gentlemen are the only persons that can decide the dispute, and I fearlessly abide their decision.

RICHARD RICKARD.

## DR. MUSPRATT'S "DICTIONARY OF CHEMISTRY."

TO THE EDITOR OF THE STAFFORDSHIRE ADVERTISER.

Sir.—Permit me, through the medium of your Journal, to direct the attention of the manufacturers of pottery and porcelain in Staffordshire to a matter in which they are interested, as I believe most of them are subscribers to Dr. Muspratt's *Dictionary of Chemistry*. I am given to understand that not more than one part of that clever and splendid work will be devoted to pottery, although seven parts have been given to dyeing, and *free* to alcohol. Surely pottery demands as much attention as either of these. Is it fair to those who subscribe solely for information on that subject, and in which chemical knowledge is of so much importance, that they should be put off? I believe the cause assigned by the publisher is that the work must be completed in a certain number of parts. But this is a very insufficient excuse to those who seek for information, and who have received upwards of forty parts without a particle of matter interesting to them. I recommend an appeal to Mr. Mackenzie, as a matter of justice, to extend the article on pottery to, at least, three parts. Hoping that this hint may have the desired effect, and apologising for intruding on your valuable space, I remain, Sir, your obedient servant—

R. W. B.

[We certainly think that if Mr. Mackenzie peruses the above, he will at once assent to the wishes of his numerous subscribers. He might lose a few grumbler; but should he, to please them, close in an unfinished manner the best *Dictionary of Chemistry*, so far, that has been published?—ED. M. J.]

## DR. S. MUSPRATT'S "CHEMISTRY APPLIED TO THE ARTS AND MANUFACTURES."

TO THE EDITOR OF THE WESTERN DAILY PRESS.

SIR.—Having seen in the *Manchester Guardian* a letter of Prof. Calvert's, from which it appears that the publisher of Dr. S. Muspratt's *Chemistry applied to Arts and Manufactures* has expressed his intention of completing the work in seven numbers, I think it is the duty of every subscriber to express his veto on such a monstrous proceeding. The 47th number is now out, treating of paper, and the article of perfume just commenced. When it is recollected that amongst the remaining subjects are photography, platinum, pottery, quinine, resins, silver, soap, starch, strontian, sugar, sulphur, sulphuric acid, tartaric acid, tin, ultramarine, water, wine, zinc, &c., it will at once strike any reflecting mind that at least twelve additional numbers are necessary to do more justice to such important matters. It would, therefore, be committing a great act of ingratitude, nay injustice, to the 40,000 subscribers to this truly national work if it should be curtailed in the proposed manner. Amongst the subjects which have been enumerated are many which have been most anxiously expected by thousands of its subscribers, many of whom were induced to take the work on the strength of those articles alone; and when we remember that dyeing occupied seven parts, alcohol five, and gave two parts, it would be only fair to those manufacturers if pottery had two or three, and soap and soda at least three parts between them. Without doubt pottery, soda, soap, and sugar are some of the most important articles in the whole catalogue, and must be fully treated of, or the efficiency of the work will be destroyed.

W. HEDD HERREYAT, M.D., F.R.S. Ed., M.R.C.S. England, 32, Old Market-street, Bristol.

Analytical Chemist, &amp;c.

A DEARTH OF DIAMONDS.—A mercantile letter from Bahia, dated Nov. 12, per *Tamar*, gives the following important information bearing upon the import trade of that place:—"The falling off in the product of the diamond mines during the last few months is something quite alarming, when we consider the important bearing it has upon the trade of this province, and it behoves shippers of manufactured goods to give this fact their serious attention, and not to be led away by the present temporary demand, arising as it does, not from the Chapada, which was wont to send us good customers, but from districts far apart from that diamond-producing province."

WELSH STEAM COAL.—The *Star* of Thursday says:—Two engineers, one of whom was engaged in making the recent experiments on North Country coal as a steam fuel, are about to be despatched by the Admiralty to Cardiff in order to test the value of the South Wales coal, and to obtain materials for a comparison of their merits with those of the northern coal.—The report of the Admiralty engineers is understood to relate chiefly to the possibility of consuming the smoke of the bituminous coals of the North of England, and to make no reference to the relative merits of the two coals. The experiments at Cardiff will embrace a wider field, and settle, it is to be hoped, definitely the disputed question of the evaporative power and general superiority of the rival coals.

MARQUITA AND NEW GRANADA.—In page 803, of last week's Journal, for "excess of cost over return," read "excess of returns over cost."

## Meetings of Mining Companies.

## GREAT WHEAL VOR UNITED MINES.

The quarterly general meeting was held at the company's offices, Gresham House, Old Broad-street, on Wednesday,—Mr. George Noakes in the chair.

Mr. THURSTON read the notice convening the meeting, and the minutes of the last, which were confirmed.

The CHAIRMAN said that he would proceed to read the reports, and he must crave their best attention and great patience. He had a number of reports to read, and they contained matter which would call for their particular attention. Such is the position of the Wheal Vor Mines that on this day's decision would depend the future prosperity of the company. He then read a long series of reports from Captains Gill, Petherick, Bryant, and others; the principal being that of Capt. John Petherick, which was to the following effect:—

It was evident the alleged existence of a great extent of rich and profitably productive ground in the bottom of the mine, forming the principal if not the sole object of the present adventurers in resuming its working, was an exaggeration, and that the state of the lode in the deeper workings did not justify the expectations entertained of its great value; but the lode both east and west of the Bounder shaft fully maintained its size and regularity, and a considerable portion of the stope contained sufficient ore to yield moderately remunerative returns at the present price of tin. The lode in the 284 and in the 264 fm. levels had recently improved, the value of the end of the former level being 182, to 201 per fm., and there was great reason to expect that a further extension of those levels westward would lead to the discovery of a considerable extent of additional and remuneratively productive ground. In the 236 a winze had been sunk, where the lode was large, regular, and productive, yielding at present from 120, to 150, worth of tin per fm., and its appearance indicated that by further development an important increase of the returns would be the result. The lodes in the ends of the 236 and 204 fm. levels afforded strong grounds to expect that a systematic exploration of the lode in the untried ground, east of the shaft, might lead to the discovery of valuable deposits. In the Wheal Metal, the prospects were of a decidedly favourable character, and when brought into a proper course of working would, in all probability, again become a productive and valuable mine. Trueman's lode: The 52 fm. level contained ore worth from 120, to 150, per fm., and was of a promising character. The extension of the levels westward, and the sinking of the engine-shaft to deeper levels, it was thought probable would lead to more valuable and important discoveries, eventually rendering this lode permanently profitable. He felt convinced that the present state of the prospects still justified the further prosecution of the mines. Two important circumstances in its favour were the present high price of tin, and the probability of its continuance; and the improved available means for drawing stuff to the surface at a comparatively cheap rate. The Old Mine ought never to have been re-opened as a commercial speculation, but as great expense had been incurred its abandonment without further trial would be unwise and suicidal. To develop the mines would incur an additional outlay of 20,000*l.*, and it was thought that profit out of from 30,000*l.*, and an expenditure of two years of time, was necessary, and that considering the great depth of the mine—300 fm.—the prospects did not justify any further expenditure.

Mr. GOODRIDGE seconded the amendment, but, upon its being put to the meeting, the proposer and seconder alone voted for it.

The original motion was then put, and carried with two dissentients.

In answer to a question from a shareholder, Mr. Petherick stated that the estimate of the amount of calls in arrear was?

The CHAIRMAN said that the arrear of call was 7137 10*l.*; this referred to all the calls that had ever been made on the mine since the existence of the present company.

Mr. COLE COLE explained that of the 700*l.* arrears there was from 150*l.* to 200*l.* due on 12 shares, which had never been brought in for registration.

It was then resolved that the reports and accounts be received and adopted, and that they be printed and circulated amongst the shareholders.

Mr. STODDEN proposed that a call of 10*l.* per share be made, payable forthwith.

The CHAIRMAN remarked that if the were to go on with the mine they would not go on as they had done. They must have the money provided by the shareholders, as they could not continue to render themselves individually responsible for the debts of the company. If calls are not paid they would use means in their hands to compel payment.

Mr. STODDEN then moved that the meeting, relying upon the reports of Mr. Petherick, and others, resolved to continue the prosecution of the mine.

Mr. BOW moved as an amendment that the company be forthwith wound-up, and the assets distributed amongst the shareholders, remarking that his grounds for moving the amendment were that, according to Mr. Petherick's report, the utmost profit they could expect was 4000*l.* per year, and that to obtain that profit an outlay of from 30,000*l.*, to 35,000*l.*, and an expenditure of two years of time, was necessary, and that considering the great depth of the mine—300 fm.—the prospects did not justify any further expenditure.

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In answer to a question from a shareholder, Mr. Petherick stated that the estimate of 400*l.* per month included the creation of a main-engine, and handed the Chairman the statement on which he had founded his estimate. The great fixed charges—water charges, &c., were of course beyond his control.

Thanks were voted to Messrs. Petherick, Gill, Bryant, and Tredinnick, for their services during the past three months; and Mr. Moates was re-elected auditor.

A vote of thanks to the Chairman terminated the proceedings.

mines would return the original capital, but regarding the proposed outlay as a new adventure, he thought they had fair prospects of success.

In reply to a question from a shareholder, Mr. PETHERICK stated that the observation as to the injurious mode of working did not apply to the present mode.

Mr. JENNINGS remarked that there was a difficulty in getting in the last call, and wished to know whether any course could be suggested to compel the calls to be more promptly met?

A SHAREHOLDER enquired what the amount of calls in arrear was?

The CHAIRMAN said that the arrear of call was 7137 10*l.*; this referred to all the calls that had ever been made on the mine since the existence of the present company.

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Thanks were voted to Messrs. Petherick, Gill, Bryant, and Tredinnick, for their services during the past three months; and Mr. Moates was re-elected auditor.

A vote of thanks to the Chairman terminated the proceedings.

## EAST PROVIDENCE MINING COMPANY.

An adjourned meeting of shareholders was held at the Auction Mart, Bartholomew Lane, on Wednesday, Mr. T. BOONAZZ in the chair.

Mr. JAS. HOLLOW (the purser) read the notice convening the meeting, and the minutes of the last, which were confirmed.

A statement of accounts was then submitted, from which the following is condensed:

Balance last audit	£1314 6 4
Mine cost, June, July, Sept., and Aug.	534 3 11
Merchants' bills	489 2 5
Sund	

DEC. 11, 1858.]

## THE MINING JOURNAL.

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the materials would realise a sum approaching their demand. Upon the Pembroke sett about 60,000£ had been expended.

It was then resolved that the Pembroke sett be at once abandoned, and that the machinery, materials, and lease be offered to the lords; and afterwards, if not taken, the committee to sell this same in one lot by private contract, or otherwise.

The CHAIRMAN said, with respect to the East Crimis Mine, a list of certain savings upon the expenditure had been made, which would bring it down to an amount something like to what they would realise.

Capt. DALE, in answer to a question, stated that when he recommended driving the easterly cut he had every reason to expect good results, judging from the workings above. Since then it had been surveyed by eight or nine agents, some of whom were the best in the county, and they had each anticipated good results. Such, however, not being the case, they had all been disappointed. But when he looked at the East Crimis Mine, the case there was altogether different. There they had already a valuable property, and a large mine, which had formerly given the adventurers great profits. The continuation of the same character of lode, and of the same value, as that in the East Crimis Mine, would before 12 months have passed bring them into an enviable position. If they had 100 fms. of levels explored upon the same character of lode, they would be able to give a profit of 300£ per month. It was a valuable lode, and ought to be developed upon a large scale. He was, however, employing as many men as he consistently could. It was his undoubted opinion that in 18 months at the furthest the East Crimis Mine would be paying dividends, for he did not think there was the slightest chance of the lode giving off.

The CHAIRMAN, in answer to a question, said that the materials would realise about 3000£, which would leave a debit balance of 1652£. Therefore, if a call of 1s. per share was then made, he thought it would be the last call they would ever have to make. If that call were made, their shares would become more valuable.

A call of 1s. per share was then made, payable forthwith.

A vote of thanks to the Chairman having been unanimously accorded, the proceedings terminated.

## ST. JOHN DEL REY MINING COMPANY.

A meeting of shareholders was held at the company's offices, Throgmorton-street, yesterday.

Mr. J. D. POWLES in the chair.

Mr. HOCKIN (the managing director) read the notices convening the meeting, and the minutes of the last, which were confirmed.

The directors' report was then read, as follows:

In conformity with the regulations of the company, the directors have now to make to the meeting a report of the company's proceedings since the last ordinary general meeting.

The monthly produce of gold, from March 29 to Sept. 17, has been—11 days, March, 10,301 oits.; ditto April, 21,739 oits.; ditto May, 25,192 oits.; ditto June, 24,355 oits.; ditto July, 23,646 oits.; ditto August, 22,756 oits.; 17 days, September, 11,381 oits.=139,311 oits. The produce for the corresponding period of 1857 was 123,495 oits. The profit, shown by the Morro Velho account, for the above-named period is about 4131£, but this amount of profit is not in hand, as the purchase of stores and provisions having to be made during the first half of the year, in anticipation of the rainy season, which falls in the second half of the year, the outlay during the early portion of the year is always greater than in the latter part. It is, however, some satisfaction to see, after the difficult period which the company has been passing through, that some profit is beginning to be made. This satisfaction would, however, have been greater if the directors could have reported an improvement in the quality of the stone. The quantity of stone stamped during the half-year has been 44,901 tons, being a larger quantity than has ever before been stamped on during six months, but the standard has been lower than for several years. The average produce during the half-year has been 3,625 oits. per ton; the average of the ten preceding years was 4,069 oits. per ton, a fact which at once discloses one main cause of the low amount of profit, now reported, inasmuch as the difference in the profit from that cause alone amounts to above 17,000£.

The directors are as yet unable to report any diminution in the cost, which has been as heavy as during the corresponding period of last year. Many unremunerative works have been forced upon the company during the past six months, which, added to still increasing prices in many articles of first necessity, such as charcoal, timber, and iron, has been the cause of keeping up the cost to its present unsatisfactory amount. Among the unremunerative works, in regard to the prosecution of which there has been no choice, may be mentioned the following—Great and expensive additions made to the timber-work, and other means taken—such as pillars both of the lode and of masonry—for effectually securing, supporting, and guarding against further casualties, both in the Bahu and the Cachoeira Mines.

In consequence of the serious deterioration of the stone in the Cachoeira Mine, it has been found necessary to make arrangements for extracting a quantity of ore left by the champion ground some years ago, which at that time, in consequence of an ample supply of rich stone being obtainable from the main lodes, was not considered worth extracting, but which, together with a further quantity of ore recently discovered in the same section of the mines, is now found to be equal, if not superior, to the best ore now produced from any part of the mines. And, further, as the operations of the last six months have developed the West Quebra Panela lode, the discovery of which was referred to in the last annual report, it has been resolved to bring the same into working order as early as possible. The directors need hardly stand in reference to these works that whilst the undertaking them has, under the circumstances above detailed, been a matter of necessity, they have hitherto, as is the case with all works of discovery while they are in progress, been wholly unremunerative. It is anticipated that the inclined plane would be completed during the month of October, when the work of extracting the lode from this section would commence, and that in a few months from that date the stopping operations in the West Quebra Panela would also commence.

The directors have in the mean time given instructions to the superintendent to reduce in every way the expenditure at the mines, as far as is possible without impairing the efficiency of the establishment; and as soon as the above-named works of extension are completed the board hope that some reduction may be effected therein.

Regarding the lode left standing at the sections named, the East Quebra Panela and the champion ground, the following is reported by the head mining captain:—I estimate the quantity of quartzite mineral standing at and below the 55 to be about 39,000 tons. At the champion ground I have already reported that I estimated the quantity standing to be about 31,000 tons, and at the north branch, about the same horizon, about 26,000; so that in all we have standing at the western part of the Bahu some 96,000 tons of lode. I am of opinion that this mass will yield 3 oits. of gold per ton. For an outlay of about 1600£, an incline plane can be put down alongside of Hurry's, so as to command the whole of the 96,000 tons of lode referred to. It can be worked by the Gamber hauling machine, and it would enable us to extract at the least 12,000 tons annually. To quarry this quantity we should require 40 borers daily; so if 15 can be called from the other departments and be added to the 25 at the Gamba, this ground would add, I believe, for about eight years, nearly, if not fully, 5000£. per annum to the profits.

And in reference to the western ground above alluded to Captain Treloar reports as follows:—The appearance as regards the continuation of the lode, westward from the Bahu to the cross-cut at Timbucuto, a distance of about 80 fathoms, are becoming very satisfactory. I should be glad if I could say much of the quality, but according to the assays it is poor. Believing, however, that the lode at this locality will follow the rule which obtained eastward—widen and improve in quality in descending—I have no little pleasure in reporting that the western part of the mine promises to become an important acquisition to the company. Morro Velho lode nestles, if I may so express it, at the south side of a lofty chain of hills, and it traverses the cleavage planes of the containing rock; westward of the Bahu Mine, a spur, consisting of bars of common clay-slate, quartzite, rock, or capel, and small cross-course, runs out south from the main chain, and the course of the lode through it is shattered and disjointed. Eastward of the spur, the width of the lode is about 30 feet, but the portions yet discovered by us in it, and west of it, nowhere exceed 12 feet. There may, however, be parallel slips yet undiscovered, but be this as it may, sufficient already laid open to show that we have stopping ground, here and there, from Bahu Mine to Timbucuto, a distance of about 80 fms.; and though it is not equal to the lode at the Bahu, it is superior to the Gamba and some parts of the Cachoeira. Moreover, in descending it enlarges, and if there be parallel slips they will, in all probability, unite; so that, viewing the western part of the mine as a whole, I feel warranted in reporting that it promises to be a great acquisition to the company. At the West Quebra Panela section, the average width of the lode at the horizon of the transept is 7½ feet; in the 20 fm. level, so far, it is 8½ feet, and the width of it, according to the separations, is about 2½ oits. of gold per ton. At the Timbucuto section, eastward of the cross-cut, the width of the lode is somewhat greater, but for want of a road for conveying the stone to the stamping no separation of it has yet been made. One sample yielded, by assay, 8 oits. per ton, but the other only about 3 oits.

The term of Dr. Walker's engagement as superintendent having expired, he has returned to his country. The board have appointed as his successor Mr. J. N. Gordon, who entered on the duties of his office in September last. The board had hoped that by this time, the company would have been deriving some advantage by a reduction in the rate paid for the carriage of stores from the metallised road, now in the course of construction, from a point not very distant from Rio Janeiro to the province of Minas Geraes, but they fear that until the road is complete they are not likely to be able to make use of any part of it; and as the progress of such works in Brazil is slow, it is expected that it will take two years from the present time to complete this useful public work. At present, as the shareholders are aware, all the stores sent from this country are conveyed on mules' backs, at a cost for carriage of about 40£ per ton. A further reduction of 1 per cent. in the duty paid on all gold raised by the company takes place this month.

The following is the financial position of the company at the close of the half-year ending March 30:—

## IN ENGLAND.

Balance at the bankers £1,900 5 1  
In deposit at London Joint-Stock Bank 25,000 0 0 = £26,900 5 1

To pay—Drafts running 25,000 0 0

On account of salaries and wages. 269 11 8 = £25,269 11 8

IN BRAZIL AT THE DATE OF LAST ADVICES THERE WAS—

Cash at Morro Velho Sept. 28, exchange 26½ £9425 0 6  
Ditto on transit to Morro Velho 229 3 4  
Ditto in agent's hands at Rio 1316 18 7 = £12,971 2 5

To meet expenditure for the two succeeding months—Oct. & Nov., estimated at £14,000 0 0

THE RESERVE FUND CONSISTS OF—

Newcastle and Carlisle Railway Debentures £4000 0 0  
On mortgage 7000 0 0  
Three Per Cent. Consols, 4500£, cost 4391 8 8  
Exchequer Bonds, 700£, cost 712 6 4

Cash at the bankers 187 6 2 = £16,231 1 2

P.S.—Dec. 9.—The following are extracts from the mine report for Sept., received by last packet. In reference to the general prospects of the mines:—In July last I mentioned that if every one would put his shoulder fully to the wheel Morro Velho would, I believe, again give gratifying profits; and I hope the results next year will verify this statement. I believe we are on the eve of better days. The lode, as a whole, seems improving. The mine force will, I trust, be augmented; and owing to our ignorance of the value of the lode at the Gamba, previous to the separation, be employed on a better field than that since the disaster last year, and the cost of the establishment, if not lessened, will not be increased.

Regarding the East Quebra Panela and Champion ground, Captain Treloar further states:—“At the Champion ground every month's experience, so far, in stripping down the lode standing at the north side has shown that my estimate of its value is on the safe side. This month the stone has yielded at the stamps 2½ oits. of gold per ton. In quarrying, however, the borers are not yet up to their mark, nor do I expect it for a couple of months yet. Operations at such a locality are tedious at first. Many of the men have to work on swing stages, and all have an uninterrupted fall of about 130 feet below them if they slip; so they are a little timid, but this risk gradually disappears. Moreover, we are impeded by the pillar of lode in section 31, for we are working contiguous to it; and as it must remain, we have to proceed carefully in order to avoid injuring it. In a couple of months hence the driving at the East Cachoeira will have reached its easterly extent; so the borers here, instead of driving, will then be employed in stoping, and the difference in quarrying will amount to 14 tons of stone per month per man; and in a couple of months hence, also, the borers at the Champion ground will be quarrying up to their mark, and the natives, in all probability, will be here in great force.” And regarding the West Quebra Panela lode, he says:—“At the 55 fathoms level we have cut, I am happy to report, the West Quebra Panela lode, so the continuation of this part

of the lode downward, and westward of the capel rock, is now placed beyond doubt. At present it is 8 ft. wide, but sufficient has not yet been opened to exhibit its total width. A sample from it has yielded by assay 10½ oits. of gold per ton.”

The CHAIRMAN remarked that the new superintendent had arrived out at his destination, and that Dr. Walker had returned home, and he was prepared to answer any question that might be put to him. For months past the discoveries in the western part of the mine had been improving; the lode was now about 8 ft. wide.

Dr. WALKER, in answer to a question, said that there was every prospect of the mine doing a great deal better than of late. The western ground promised well; and he felt confident that its development would lead to very satisfactory results. His impressions had been formed from conversations with the mine captain, and other professional men connected with the mine. All the officers were assembled every morning at nine o'clock, and questioned as to the various workings.

Mr. S. HERATHAP said the two important points were the probable reduction of the working expenses, and the character of the lode newly discovered. These were points of the importance of which could not be over-estimated as to the future value of the concern. He was one who thought that the future of St. John del Rey would fall very little short of its best days. He had been a shareholder for many years, and had carefully perused the details of many reports, and he thought that good results would eventually arise. He had conversed with the brother of Capt. Treloar, from whom he had obtained much information. The western ground was producing the same quantity that had been taken out in former days.

Mr. SCHOFIELD observed that as the western lode was supposed to be the continuation of the main lode, it could be opened at a much smaller cost. The extent of the lode westward was everything; if it did not continue westward he thought the mine would scarcely pay costs.

Mr. JAGO enquired whether their new superintendent (Mr. Gordon) was capable of going underground?

The CHAIRMAN answered that he was. The selection of a superintendent was a very anxious duty for the directors to perform, but they confidently believed that in Mr. Gordon they would find a very efficient agent.

Mr. RICHARDS asked if there had been any irregularity? Had a mortgage been given, and, if so, he should like to know whether there was a power of sale in it?

The CHAIRMAN observed that property valued at 24,000£ had been mortgaged, and the total loan upon it was about 13,500£; but the solicitor was now negotiating for its sale.

Mr. ROBERTS (the solicitor), in answer to a question, stated that he did not know the value of the property, but the surveyor had valued it at 24,000£. He believed there was no reason to doubt that the realisation of the property would not meet the whole of the advance: the legal securities were quite satisfactory.

Mr. BOSWORTH observed there would be no time lost in bringing the property to a sale.

Mr. RICHARDS enquired what was being done in the case of the St. John del Rey.

Mr. ROBERTS said, when he was told to take every means to prevent any loss, though there was good reason for believing that the property would realise the whole of the mortgages upon being sold, he had thought it right, as a matter of precaution, to file a bill against the executors of the owner of the property. He did not, however, think it desirable to go into details.

Mr. RICHARDS thought there was sufficient money in hand to declare a dividend of 10s. This would, doubtless, have a very good effect; besides which, there were many persons in the company to whom it would be a matter of moment to get a dividend.

Mr. S. HERATHAP was anxious to receive a dividend as anybody, but he did not think it wise to declare a dividend then.

The CHAIRMAN remarked, that although 4000£ had been earned, it had not been received in this country.

Mr. JAGO thought that any amount of profit was necessarily divisible. Another advantage would be gained by calling in all the scrip.

Mr. RICHARDS was anxious to see the share-book in a healthy state.

Mr. BOSWORTH, under present circumstances, would view the declaration of a dividend as fraught with the greatest danger. Their position at that moment was one of very great interest and promise; in fact, their affairs never stood in a more interesting position.

They were now venturing upon prospects which were not imaginary, not speculative, but honest and just. If they could curb their impatience, he thought that in two or three months their affairs would present an enviable position. He trusted that, under the circumstances, a dividend would not be pressed.

A lengthy conversation ensued as to the most advisable means to facilitate the registration of scrip shares, upon which

Mr. HYDE CLARKE, C.E., observed that even a dividend of 5s. per share would not be wise to bring in the shares for registration in the market, and he thought it would be the wiser course to wait patiently and temperately to accomplish that object, which was one of importance. He should not recommend the declaration of a dividend prematurely.

The subject then dropped.

Mr. BOSWORTH, in answer to a question, said he had formed a good opinion of the new superintendent, Mr. Gordon, whom he deemed as a man in every respect worthy of the confidence reposed in him.

A vote of thanks to the Chairman terminated the proceedings.

## EAST INDIA COAL COMPANY.

A meeting of shareholders was held at the company's offices, Gresham House, on Wednesday.

Mr. W. S. AUSTIN in the chair.

Mr. H. HAYMAN read the report, as follows:

The directors have now the pleasure to submit to their fellow-shareholders the accounts of the company, duly prepared and certified.

These accounts cannot fail to be highly satisfactory by the shareholders, inasmuch as, after writing off 5931. 19s. 5½d. from the preliminary expenses, and 2612. 1s. 23d. from the Indian expenses, &c., &c., as shown in the former accounts, there appears a balance to the credit of 59381. 19s. 9½d., equal to a dividend of 7½ per cent.

But, inasmuch as these moneys cannot be received in England until February, the board of directors will not be in funds to distribute any dividend, which the shareholders may decide on declaring, until the month of March.

The directors have to announce to the shareholders the arrival in India of the permanent agent of the company. The reports received from that gentleman show that the company is making a steady and yet rapid progress, and that its property is in a most prosperous condition. The active exertions of the agent have already been crowned with considerable success. Some changes have been made among the officers of the company which meet with the approbation of the board of directors. As the result of a more careful supervision and more vigorous management of the collieries, four times the amount of coal which was for a long time the yield of the coal pits has recently been raised.

At the beginning of the year your directors turned their attention to the substitution of some economical and speedy mode of conveying the coal from the mine to the terminus of the East India Railway Company at Ranengunge. The communication by bullock carts appearing to be not sufficiently expeditious, your directors, after a careful investigation of experiments made by its manufacturers, dispatched to India one of Boydell's patent endless railway engines, and six trucks, capable of carrying on the ordinary road about 20 tons each journey. They have arrived safely in Calcutta, and your directors hope shortly to hear that the engine and carts are in full work.

The shareholders will perceive, upon an examination of the accounts, that 2132 shares belonging to the English shareholders, and 157 shares belonging to Indian shareholders, have been declared forfeited. It may also be seen that 2937 shares are still with only 5d. paid upon them. To explain this in a proper and satisfactory manner would be beyond the limits of a report. The directors, for reasons which will be explained at the meeting, have given to the Baboo Ramchunder Moity, and others, time for the payment of their shares, and this matter, as well as certain proposed alterations in the Deed of Settlement, will be carefully discussed at a special meeting of the shareholders, which is the present intention of the board to call in the course of the next three months.

The shareholders will also observe that Mr. Hayman has resigned the office of secretary, and offered himself as a candidate for a directorship. The directors are of opinion that the company will derive benefit from this change, as well as from the addition to the board of a man who has been in the habit of doing as secretary at the same remuneration as he received as secretary—41s. 19s. 4d. per month, till such time after the general meeting as the board may be able to make other arrangements; and the board gladly avail themselves of Mr. Hayman's offer, in consequence of his intimate knowledge of the affairs of the company, and the zeal he has evinced in the discharge of his duties.

The same to be voted as a remuneration to the directors and to the auditors for their respective duties will be taken into consideration by the meeting.

The directors have been so fortunate as to secure the services of Messrs. Howard and Dollman, who will co-operate with their present solicitor as legal advisers of the company.

The directors again repeat to their fellow-shareholders that the board has acted unanimously in furthering the best interests of the company, and express their sincere conviction that, with the present management in India, and a continued care and vigilance on their own part, the property of the Company is in a very prosperous condition, and that far larger profits than those at present realised may, in all probability, be expected.

The CHAIRMAN said he would merely make a brief statement, because he thought, how much soever any shareholder might feel disposed to complain, the report was sufficiently explicit; he would, therefore, make only a few comments in explanation, and the directors would be very

## Mining Correspondence.

## BRITISH MINES.

**ABBEY CONSOLS.**—J. Trewin, Dec. 4: The lode at the western engine-shaft is producing a little lead, but not to value. The lode in the 10, west of the western engine-shaft, is yielding from 3 to 4 cwt. of lead per fathom. The stopes in the back of the 10, east of the western engine-shaft, are worth on an average 9 cwt. of lead per fm., and have an improving appearance. The lode in the winze in the bottom of the 10, east of the said shaft, is producing 6 cwt. of lead per fm. The stopes in the back of the 10, west of the eastern shaft, are worth 10 cwt. of lead per fm.

**ALFRED CONSOLS.**—T. Trelease, T. Hawking, Dec. 5: There is no alteration in the main lode in the 170, east of Field's shaft, since our last report. The main lode in the 140 and 130 fm. levels, east of Davey's engine-shaft, is much of the same size and character as for some time past; this lode in No. 2 winze, sinking below the 110, is worth 35*t*. per fm. In driving the 120 cross-cut south we have intersected the south branch; this branch is 15 ft. wide, producing stones of ore of a very promising appearance; this branch is the 110, east of winze, is worth 35*t*. per fm.; west of the same it is worth 7*t*. per fm., a very promising lode. This branch in the 100 is worth 10*t*. per fm. The north lode in No. 1 winze sinking below the 120 is worth 3*t*. per fm. The new north lode in the 70 is 2 ft. wide, producing good stones of ore. We have not yet intersected this lode in the 100 cross-cut north. No other change to notice.

**ANGARRACK CONSOLS.**—James Barratt, Dec. 7: Since my last communication of progress nothing new has occurred in this mine. Cox's shaft is down 8 fms. 5 ft. below the 12; the progress in this shaft has been slow, having hard ground through the past month. The cross-cut being driven north is in 15 fms. 3 ft. 8 in. from Cox's engine-shaft, ground variable, and is hard at present. Our setting took place Saturday last, when Cox's shaft was taken at 18*t*. 18*s*. per fm., and the cross-cut at 8*t*. 10*s*. per fm.

**BALLYMOREEN.**—W. Barkla, Dec. 4: The men that were driving the 25 cross-cut south have been the last three or four days driving east, which is producing stones of sulphur, and has been driven 3 ft. 6 in. We have put the men that were driving the adit east to drive north. At the present end the ground is slow for driving, and has been driven 2 feet.

**BALLYVIRGIN.**—D. Macdonald, R. Fellow, Dec. 2: In driving the east cross-cut from the north end through the gossan, we cut a soft run of ground and water, which compelled the men to drive in the cross-cut, and also those working in the winze, to leave their places for the present. The water, on account of the heavy rains which lately prevailed, was very quick, but it is now abating. We hope to be able to clear away the stuff in a few days, and resume the bargains as formerly. Previous to leaving the winze the party there cut through the ground of which disordered the lode, and came upon a bunch of copper ore and gossan 8 in. wide. No. 3 stope is worth 1*t*. of copper ore, 10 cwt. of lead, and 8*t*. tons of muntic per square fm. No. 4 stope is worth 1*t*. of copper and 5 cwt. of lead per square fm. The south stope is worth 1*t*. of copper, 10 cwt. of lead, and 3 tons of muntic per square fm. We have had 2 tons of lead, 2*t*. 1*s*. of first crop copper, and 2 tons of second crop copper to pile, and also 5 tons of muntic. We have prepared for the crusher 1*t*. 1*s*. of lead, and 1 ton of third crop copper. To save costs we have disengaged the lift, as we are not working under the 10.

**BARF.**—J. Frank, Dec. 7: The forebreast in Laidlaw's level has much improved for the better; the lode has assumed a more vertical form, emitting a good deal of water; the ground is much easier, and the lode larger. I am sure that by driving this level much brighter days are in store for us, and that we shall soon have a course of lead, with 1000 ft. of backs to stop away in whole ground, and in all probability it will return the whole of the expenditure back in a month. We have secured Loudon's workings, which will not be required for 30 years. The cross-cut is being pushed on to No. 2 level, where no doubt it will produce for lead ore.

**BEDFORD CONSOLS.**—J. Mitchell, Dec. 9: The south part of the lode in the middle adit level is producing some very fine specimens of copper ore. The north part of the lode is not looking quite as well as when last reported, but, on the whole, the end continues to present favourable indications for a bunch of ore. In the winze sinking below the shallow adit level there is no change of importance to notice since last report.

**BEDFORD UNITED.**—J. Phillips, Dec. 7: There is no change to notice in any part of the mine since the report for the meeting.

**BODCOAL.**—F. Evans, Dec. 7: The 22 east has been extended 1 fm. 5 ft.; making the total driven 3 fms. The lode is producing a little ore—saving work; it is large and well-defined, and gradually improves as we go eastward. Our drawing machine is nearly finished, which will save a good deal of expense in drawing the stuff out.

**BOILING WELL.**—J. Delbridge, Dec. 4: At the engine-shaft sinking below the 60 the lode is large, yielding lead, blende, and copper. In the 60 west the lode is large and poor. In the 60 east, to communicate with the 50 west, the lode is yielding stones of lead. We have extended the 50 east to Austin's, but leaving 3 fms. above Austin's. The 50 we have suspended until the lode is cut in the 50, at Austin's. At Austin's shaft, sinking below the 40, the ground is not so hard as last week. In the 40, east of Austin's, the lode is 20 in. wide, with good stones of copper ore, and very wet. In the 30, west of Syrett's, the lode is 6 in. wide, with a little lead. In the 40, west of old sump, north lode, the lode is 1 ft. wide, with good stones of copper ore. The 10, west of Austin's, is in tribute ground. The 30 rise is in tribute ground for copper. Bates's winze, west of Syrett's 30 to 40, is yielding some good lead. The 20, west of Austin's, is producing stones of ore. At Roberts's shaft, sinking below the adit, the lode is 2 ft. wide, yielding lead, copper, and blende. Other things without change to notice.

**BRONFLOYD.**—M. Barbery, Dec. 8: There is no alteration worthy of notice since last report, except that the lode in the deep east adit of the junction is still looking well, and the parts are carrying well yield from 1 to 1*t*. 1*s*. per fm. The stopes are also yielding fully their usual quantity of ore. Dressing and surface operations proceed satisfactorily.

**BRYNTAIL.**—J. Roach, Dec. 9: The rise above the 10 is up 2*t*. 6*s*. fms., and quites a good as when reported on last week. The ore averages 5 ft. in width, and is worth full 90*t*. per fm. We are now driving the 10, west of No. 4 cross-cut, to ascertain the quality of the south part of the lode in that direction; it is now worth 10*t*. per fm. for lead ore. As soon as we get the level ventilated the 10, east of said cross-cut, will be resumed; here the lode is worth 12*t*. per fm. for lead ore. Good progress is now being made in the 25 cross-cut; we are, I believe, getting very near the lode. The excavations for the tramroad and incline are going on favourably. We shall soon be in a position to lay the rail, &c. Yesterday we crossed a branch in the cutting bearing 30 degrees east of north, from which we broke upwards of 30 lbs. weight of solid ore. We pursued it a foot, which appeared to improve as we sank after it; by-and-bye we shall develop this a little further.

**BULLER AND BASSET UNITED.**—G. Reynolds, Dec. 8: Since my last report the shaftmen have cut ground for cistern and bearings, and to-day we hope to complete fixing the drawing-lift from the 65 to the 50 complete, after which we shall commence at once to case and divide the shaft, and cut a plat at that level, which we hope to complete in about four weeks from this time. The lode going west in the 50 is still large, and looking very promising, and we look forward for great improvements in laying open the deeper levels.

**BWLCH CONSOLS.**—R. Northey, Dec. 4: The lode in the 70 is worth 4 cwt. of lead ore per fm. The stopes in the back of the 70 is worth 12 cwt. per fm. The lode in the 60 west is worth 7 cwt. per fm. The stopes in the back of the 60 is worth 8 cwt. per fm. Nothing has been done in the 40 since I wrote you last, as I have been obliged to put the men to assist in repairing the shaft at the old mine, which is in a very bad state, but we are getting on with it as fast as possible. The stopes in the 40 fm. level is worth 8 cwt. of lead ore per fm.

**CAMBORNE CONSOLS.**—W. Roberts, Dec. 7: The following bargains were set on Friday last:—The 50 cross-cut to drive north, by four men, at 9*t*. 10*s*. per fm. A winze to sink under the 20, by four men, at 9*t*. 10*s*. per fm., lode small. The 20 to drive west, by four men, at 6*t*. per fm., lode 1 ft. wide, composed of muntic and occasional stones, of ore. The adit cross-cut north, by two men, at 3*t*. per fm.

**CARADON CONSOLS.**—W. Rich, Dec. 7: The cross-course in Thomassine's shaft is still very regular, well-defined, and nearly perpendicular. It is principally composed of white decomposed granite, very similar to the cross-courses in the adjoining mines. There is no great change in the character of the lode in the shaft since last report. We sometimes find a little of the black oxide of copper in the lode intermixed with the gossan.

**CARDIGAN CONSOLS.**—J. Sanders, Dec. 6: In the 20 west we have driven through a good lode of ore, which is standing in the back of this level for 10 ft. long, but I regret to say that the end at present is poor. There is no change to notice in the 10 east. In the 10 west there is a little improvement. This level has been driven for the last 7 fms. through very unsettled and unproductive ground, but during the past week we have met with the hard part of the lode, which appears to be more settled, and is at present producing stones of lead ore occasionally. The pitch in the back of the 10 is not quite so good as last reported, the lode at present being split into small branches. All other parts of the mine are much the same as last reported.

**CASSELL.**—F. Evans, Dec. 6: During the last month we have been hindered considerably by the severe weather, &c.; however, during the past week we have extended the 10 east 1 fm. 2 ft.; making the total now driven, 8 fms. 2 ft. 6 in. We shall now make good progress, and shall soon commence to cross-cut our main lodes on the north and south. We drive on this now because it is the most easily to open, and will sooner bring us east far enough to cross-cut the main lodes named.

**CATHERINE AND JANE CONSOLS.**—R. Harry: The lode in the deep adit end is 18 in. wide, producing 4 cwt. of ore per fm., and presenting an improved appearance. The stopes, north-west of No. 4 winze, continue to yield 10 cwt. of ore per fm. The stopes in the cross-hatch are not looking quite so well, worth at present 5 cwt. per fm. The lode in the middle adit end is about 1 ft. wide, producing stones of ore occasionally, but nothing to value. In No. 5 winze, sinking below the middle adit, the lode is 1 ft. wide, producing 3 to 4 cwt. of ore per fm. The lode in the new stope, in back of said level, continues to look well, being about 18 in. wide, and worth from 10 to 12 cwt. of ore per fm. In the shallow adit end the lode remains much the same as last reported, yielding good stones of lead, saving work. This level has to be extended to 10 ft. wide, north-west to get into the run of ore ground driven through in the adit.

**COLLACOMBE.**—S. Mitchell, Dec. 7: During the last week the 84, west of the western shaft, has been driven 9 ft.; the lode is of a highly promising character, being 5 ft. wide, composed of capel, quartz, prian, and 1*t*. 1*s*. ton of ore per fm. No alteration in any other part.

**CROWNDALE.**—J. Richards, Dec. 9: In the pitch in the bottom of the 30 the lode is worth 4 tons of ore per fm. In the pitch in the back of the 30, on the south part of the lode, the lode is improved, and is worth 3 tons of ore per fm.; this south part of the lode appears to be standing whole to the surface, a height of 30 fathoms, and the 10 is being cleared for the purpose of driving a cross-cut south for intersection thereof. About 2 fms. have been driven east on the lode lately met with in the shallow adit level north; it is 2 ft. wide, composed of muntic, gossan, quartz, prian, and a little ore.

**CWMBRNE SEBON.**—J. Boundy, Dec. 4: The 70 west has been driven 14 fms., and about 2 fms. more to get forth to the winze. The lode at present is from 2 to 3 ft. wide, worth about 4 cwt. per fm. I expect to hole to the winze in about a month or six weeks. The 70 east is driven on the south part of the lode 8 fms., the lode small and poor in the present end; driven on the north part of the lode 4 fms., the lode at present 18 in. wide, worth from 4 to 5 cwt. per fm. In the winze sunk below the 60 east 4 fms. 3 ft., no lode has been taken down. We are now sinking on the south part of the lode. The 60 east, on the north part of the lode, is driven 3 fms. 2 ft.; lode 1 ft. wide, worth for lead 6 cwt. of ore per fm. The 30 cross-cut, on the north lode, is driven east 3 fms. 4 ft.; lode 18 in. wide, worth for lead from 3 to 4 cwt. of ore per fm. No lode has been taken down in the end driving west on the north lode. Everything has been pushed on as fast as possible.

**DALE.**—R. Ninnes, Dec. 9: On Sunday morning last the crank-pin of the engine broke, and we did not get the engine to work again until Monday evening. The water is going down again very well, so that what might have been a serious accident will only be a delay of a few days.

**DEVON AND COURTEENAY.**—T. Rawlinson, Dec. 9th: We have gone through the lode at the 100, and find it 3 ft. wide, composed of capel, muntic, and copper ore, worth

for the latter 2 tons of ore per fm.; we shall now commence to drive both east and west, which will lay open some good ore ground. The lode in the pitch in back of the 60 will turn out 4 tons of ore per fm. The lode in the pitch in back of the 60 will turn out 1 ton of ore per fm.

**DEVON AND CORNWALL UNITED.**—T. Neill, Dec. 7: The only alteration to report on this week is the winze at William and Mary, on which the lode has gradually improved, and is now worth 7 tons of ore per fm.

**DEVON BURRA BURRA.**—J. Lord, Dec. 9: The 40 cross-cuts north and south are progressing favourably, but we have not intersected the lode yet. In driving north at White's shaft (22 fms.) we have cut through a lode, 5 feet wide, bearing east and west, and composed of peach, prian, muntic, and slight traces of black copper ore. The branch driving east is without alteration.

**DEVON GREAT ELIZABETH.**—W. V. Williams, W. Goyen, Dec. 9: All our work here is progressing to our entire satisfaction, and by the end of the week we hope to be able to inform you the day on which we shall be ready to put the machinery to work, after which operations will be immediately commenced in sinking Great Elizabeth's engine-shaft.

**DEVON WHEAL BULLER.**—F. Bennett, Jun., Dec. 8: The lode in the 44 west continues its size and character, being about 3 ft. wide, and yielding 1*t*. 1*s*. ton of ore per fm. The lode in the stopes in the back of this level will yield about 1 ton of ore per fm. The lode in the rise in the back of the 20, is about 1 ft. wide, and will yield about 1*t*. 1*s*. ton of ore per fm. Other parts of the mine are much as when last reported.

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wide, worth 20/- per fin. In the 132, north of Chippindale's shaft, it is 2 ft. wide, worth 12/- per fin. In the 130, north of ditto, it is 2 ft. wide, worth 8/- per fin.—South Mine: Trellawny's shaftmen are still engaged in cutting a plait. The lode in the 142, south of the shaft, is 3 ft. wide, worth 11/- per fin. In the 130 south it is 3 ft. wide, worth 10/- per fin. In the 107 north it is 3 ft. wide, worth 8/- per fin. The stopes and pitches are producing much as usual.

**WHEAL TEHIDY.**—J. Pope, Dec. 8: Nothing new in the 60 cross-cut. The 60 east, on caunter lode, will produce 1 ton of copper ore per fin. In the 50, east of boundary, the lode is 1 foot wide, producing 1/2 ton of copper ore per fin., and looking promising for further improvement. The tribute department as last reported.

**WHEAL UNION.**—T. Glanville, Dec. 8: In the winze sinking below the 20 the north lode is 4 ft. wide, composed of spar, intermixed with copper ore. In the 50, driving east, the lode is 15 in. wide, opening tin ground that will work at moderate tribute.

**WHEAL WREY CONSOLS.**—John Williams, Dec. 9: We have an improvement in driving the adit level east. We now have a leader on the footwall of the lode about 18 in. wide, composed of mudi, and impregnated with rich yellow copper ore. We have another leader, about 4 in. wide, now forming in the back of the level, which is rich for copper ore.

**WILLOW BANK.**—W. Paul, Dec. 6: The shaft is now down 8 fms. 1 ft. below the 30; the lode at present is from 3 to 4 feet wide, composed of spar and clay-slate, with spots of lead and copper ore—looking very promising. The 30 east is improving a little; the lode is about 4 feet wide, composed of hard spar with a little clay-slate, and spotted with lead ore. The cross-cut is extended 3 fms. 2 ft. 6 in.; no lode is yet met with. We got the mine in fork on Friday last, and the following bargains are set:—The 30 east by six men, at 9/- per fin. The cross-cut to drive south by two men, at 7/- 10/- per fin. The shaftmen will go on the same as before; they have not finished their bargain.

#### MINING NOTABILIA.

[EXTRACTS FROM OUR CORRESPONDENCE.]

There has been a fair amount of business doing, and considerable fluctuations have taken place in the current value of some of the mines that are chiefly dealt in. The late advance in the price of tin, together with an almost certain rise in copper, tends to encourage investment in good mining property. There are various mines now selling at such rates that cannot fail to remunerate an outlay, and we recommend immediate purchases to be made, in order to ensure the profits that must ensue from the favourable reaction inevitable from the present low rate and plentiful supply of money. The great advantage of good mining property over ordinary investments is the enormous rise that may any day take place in its intrinsic value. For instance, Wheal Charlotte shares, a week since, were 11/- to 12/-; to-day the current price is 18/- to 20/- This rise has been established by the improvements that have taken place in the mine. It must be apparent, however, to any one acquainted with mining property, that previous to the circumstances above noticed this mine was quoted much below its real value. Many such instances are under our notice at the present time, and nothing but unforeseen circumstances can prevent their taking a position that will ensure a good profit to those who employ their capital in this legitimate (if well selected) branch of British industry. We will mention the following mines as a means of investment which present more than ordinary chances of success. South Cadron, West Cadron, Trellawny, Wheal Mary Ann, West Seton, and Carn Brea. These are all dividend mines, paying from 12 1/2 to 20 per cent. The following progressive mines are on the point of paying dividends, and will, in all probability, attain a considerable rise in market value in a short period:—Wheal Charlotte, Wheal Addams, Tolvaidd, East Bassett, and Kelly Bray. These mines, at their respective current prices, scarcely partake of anything approaching a speculative character; while West Par, Old Tolgas, Great Hews, East Russell, Lady Bertha, St. Day United, Bryntail, Catherine and Jane Consols, and North Dows, are deserving of especial notice to the speculator.

**THE GOLD STREAMS OF OVOCa (Ireland) were worked, some 60 years since, by Government, when soldiers were employed to watch the "diggers." It was found, however, to be so unprofitable that the practice was given up. Speculation was one of the principal reasons of failure; it was impossible to prevent a large portion from being secreted. Even within the last few years miners, who had no other employment, resorted to this work, and sometimes obtained a scanty living. The manner of working seems to have been precisely as in tin streaming in Cornwall. Gold was found in the ravines down which torrents must have rushed from a huge mountain, whose base is granite; the gold was associated with tin, but not in large quantities. The works appear to have been extensive. The stent, or refuse pebbles, are not so much rounded as in the detritus of the Cornish streams, nor do they bear the same characteristics. They are wholly free from scoraceous and hornblende rock, and are chiefly of argillaceous slate and granite. A rumour was prevalent that these streams were to be reworked, but we believe it was without foundation.**

**THE CARYSPOT MINES (county Wicklow).**—A party of spirited individuals are about to put some of the mines situated on this extensive royalty into a state of working. They have been in abeyance many years. When last worked they were found productive, but inadequate capital and dissension in their councils led to their suspension. We trust that the present adventurers will avoid this fatal error.

**THE SULPHUR MINES in the Vale of Ovoca, (county Wicklow) are again displaying signs of considerable energy.** The demand for sulphur having again revived, with the improvement in trade generally, immense quantities of these pyrites are shipped, to the amount of some thousands of tons monthly. Large fortunes have been realised from this once valueless article. Most of the mines are in private hands, and worked as such, and not as public companies; hence we see so little of their produce or value. An enterprising capitalist from London has just opened up a valuable deposit of this mineral, which he purposes working in a similar manner, and for this purpose has just imported a steam-engine from Cornwall; it is now on the mine, and will be set to work forthwith. We heartily wish him success in so spirited and expensive an undertaking.

**ANGLO-CALIFORNIAN GOLD MINING COMPANY.**—Advices this week have arrived, stating that from the Cape of Good Hope the *Celt* took Captain Sir Henry Huntley to the Isle of Ascension. The worthy superintendent of this unfortunate company had a law suit with our directors, and we have never seen any accounts of his Californian expenditure, or how the litigation between them was settled. Mr. James Dungan, of Kerry, formerly a simple Irish labourer, has now our property. Surely before we are called upon to contribute the further 3s. per share demanded of us we ought to know how the 100,000/- subscribed capital has been expended. —LEX.

**GREAT DOWGAS.**—There is a good lode for tin in the midway level, east of Trevanion's shaft, which is considered to be of great importance to the mine. The lode in the next level, driving towards the above, is large and kindly, with a rich branch of tin on the north side.

**SOUTH LADY BERTHA** continues to attract public attention. The prospects of the mine continue to improve, rich copper ore being raised, worth 20/- per ton.

**BENEATHWOOD MINE.**—A few weeks since I saw in your valuable Journal a short notice of a mine, called Beneathwood Silver-Lead Mine, situated in the parish of Linkinhorne, on the property of Mr. Thomas Kitton, one of the projectors of South Cadron Mine. A steam-engine has lately been erected on this mine by Mr. Loam, engineer, and on Friday last a highly respectable body of shareholders attended a meeting on the mine. After the regular business had been disposed of, with their friends, adjourned to Addicott farm-house, to celebrate the event of putting the engine to work. The captain (John Loam), having only just time to open about 6 ft. on the course of the lode, at 11 fathoms from surface, was, however, enabled to throw up some fine specimens from the lode, consisting of mudi, quartz, and silver-lead ore, and it was considered by the miners and many gentlemen present that, from the strong and very congenial character of the lode, the country or strata through which the lode runs, and other highly favourable features, in depth larger deposits of ore may be expected.

**NEW WHEAL VOR** contemplate selling 20 tons of black tin this month.

**WEST CRINNIS AND REGENT.**—There is an improvement in the 80 cast; the lode is now producing some good ore. The lode in the 70 west is also looking better, and likely to improve still further. The 60 west is also improving. The 70 cross-cut is advancing satisfactorily towards Bell's lode. The four points named will, it is expected, when the junction is reached. A rise in the back of the 80 is worth 20/- per fin.

**OLD TOLGS UNITED.**—The south lode in the 32 has improved, and is now worth from 4 to 5 tons of ore per fin. The stopes behind the end will produce 3 tons of ore per fin. The cross-cut in the 42 is a point of great interest, and that as well as the shaft are being wrought as fast as possible. There are 22 tons of ore dressed, and a parcel of 80 tons, and a large pile of mudic on the floors.

**GERNICK.**—The prospects of this mine have much improved during the last fortnight. There is a fine lode in the 35 end east, 3 ft. wide, and producing rich ore throughout.

**THE NEWTOWARDS MINES,** we hear from good authority, are looking extremely well. These mines are of considerable depth, and have made large returns of lead ore from time to time. They are situated in the county Down, and are under the able superintendence of Capt. Silas Evans, who has been resident on them for some years.

**BRYNTAIL** continues to improve in every point, and I have no doubt but the returns will be trebled during the current month. I learn that in a recent excavation for necessary work that the lode, or a deposit of lead, has been found to continue up to surface, for they have in the course of that operation found solid stones of lead, altogether about 1/2 cwt., within 1 ft. of the surface, clearly showing that the lode is productive even in untried ground.

**NORTH DOLCOATH.**—The mine is looking well in every part. The last 10 fms. driven in the deep adit is worth on an average over 100/- per fin.

**EAST ROSEWARNE MINE.**—The small sample of native silver ore has been carefully assayed by Messrs. Johnson and Matthiéy, and contains a proportion of fine silver, equal to 8497 ozs. to the ton of 20 cwt. of ore.

**WHEAL CHARLOTTE.**—The lode in the 40 end west is worth 60/- per fathom; this lode is now three times better than any hitherto seen in the mine before last week. Yesterday's sale realised 1639/- 6s., against a working cost of 800/-, and dues, say 100/-, leaving a profit of upwards of 760/- for the two months. The next sale will realise upwards of 3000/-, consequently the profit will be, say, 1000/- to 1200/- Now, it must be remembered this return of ore has been made from reports on the average not exceeding 20/- per fathom, and all above the 40 fathom level. This day a telegram has been received, stating that the lode at the 50, going west, under the ore ground above referred to, is worth 1 1/2 ton, at 10/- per ton, and improving fast. It will also be observed, by referring to the report, that this lode in the 60 will be cut in about three weeks, when the samplings are likely to increase fourfold. Therefore, looking at this concern in a commercial view, and by applying a simple rule; if a lode at 20/- per fathom produces a profit of 1000/- in two months, what will a lode of 60/- give in twelve months?

**TOLVADDEN MINE** is doing and looking well. A winze under the 20 is producing 5 tons of ore per fin., and the end east very much improved.

**WHEAL MARY.**—This old tin mine is looking well, as, in fact, are all the tin mines in the Lelant district.

**UNITED MINES (Tavistock).**—The north lode has been discovered in the winze sinking under the 26, making the winze now fully 30/- per fin. In driving the 48, it is calculated that the rich bunch of tin gone down from the 36 will be met with in about 4 fms. driving; the ground is easier. The tin sold for the past month realised about 140/-, and preparations are being made for the next sale, which will be ready prior to the next pay.

**FROM WHEAL CHARLOTTE** the agents write:—The 40, west of Trevelyan's shaft, is better than we have yet seen it, from 3 feet to 4 feet wide, all ore, and of good quality; turns out 7 tons per fin., worth 60/- per fin. The stopes in the back of this level, east and west of Trevelyan's shaft, for a length of 50 fathoms, are producing from 1 1/2 to 2 1/2 tons per fathom, worth on an average about 18/- per fin. Stopping at an average of 33/- per fin.—A telegram dated the 9th inst., stated that the lode had been cut in the 50, worth 1 1/2 ton per fin., and improving fast. Friday, 8 P.M.: A telegram states the lode in the 40 to be worth 1 1/2 ton per fin., and improving rapidly. [The agent's report will appear in *extenso* in our next.]

**WHEAL FLORENCE.**—The water-wheel and pumping machinery will be completed, or very nearly so, this week, after which the mine will soon be drained. The lodes as far developed by adits continue to present the most favourable prospects of being very productive of ore, and great expectations are entertained of the Lake or Silver lode in the 10 fm. level. The greatest activity and earnestness prevails at the mine.

**NORTH DOLCOATH.**—This mine has sold 2 cwt. 2 qrs. 13 lbs. of silver gossan, at the rate of 156/- per ton; 5 cwt. at 78/- 8s. 6d. per ton; 21 cwt. 1 qr. 24 lbs., at 31/- 12s. 6d. per ton; and 23 cwt. 0 qrs. 17 lbs., at 84/- 8s. 6d. per ton; total amount of sale, 637/- 18s. 9d.

**SOUTH WHEAL ELLEN.**—The adventurers having resolved that the materials for this mine shall be tendered for, tenders were accepted on Friday for the following articles:—Powder, at 5s. per cwt.; timber, at 8d. per foot; tallow, 5s. per cwt.; candles (No. 1, best), 6s. 2d. per dozen lbs.—*West Briton*.

**BALLESWIDDEN MINE.**—A sad accident occurred on Monday to a man named Bennetts, of Dowran. The ground unexpectedly gave way, and a large rock fell on the poor fellow, causing a bad fracture of the thigh, and a wound on the back of the head. The case is going on as favourably as can be expected.

**MIXON GREAT CONSOLS MINING COMPANY.**—Vice-Chancellor Sir W. Page Wood has appointed Mr. T. W. White, Old Jewry Chambers, the official manager in winding-up the affairs of this company.

#### THE COAL TRADE.

The following is a statement of the delivery of coals, &c., in the port of London during the month of November:—

	Ships.	Tons.	Sails.	Tons.
Newcastle	239	105,529	Scotch	9 1,563
Seaham	53	13,070	Welsh	33 13,729
Sunderland	174	61,127	Yorkshire, &c.	21 1,178
Middlesb'.	24	5,875	Small	1 639
Hartlepool & West Hartl.	217	64,739	Clyders	3 306
Blyth	12	3,290		
Total		845		271,088
Total imported in November, 1857				333,166

*Comparative Statement of 1857 and 1858.*

Imported from Jan. 1 to Nov. 20, 1858. Ships. 9,514 2,916,535 tons.

Imported from Jan. 1 to Nov. 20, 1857. 9,364 2,792,691 ".

Increase of ships and tons in present year. 150 123,844 "

#### THE RAILWAY COAL TRADE.

Monthly statement of coal and coke brought by railway and canal within the London district, during the month of November:—

Railways.	Tons cwt.	Railways.	Tons cwt.
London and North-Western	56,167 19	Great Western	3,810 2
Great Northern	54,771 14	South-Eastern	1,485 13
Eastern Counties	10,695 7	Midland (via Great Northern)	2010 0
Total by railway in November, 1858	123,940 13		
Coals by railway in November, 1857	105,088 2		
Coals by canal in November, 1857	2,214 5		
<i>Comparative Statement of 1857 and 1858.</i>			
Coals by railway from January 1 to November 30, 1857	1,106,752 12		
Coals by railway from January 1 to November 30, 1858	1,078,098 11		
Decrease in the year 1858—railways	28,654 1		
Coals by canal from January 1 to November 30, 1857	23,633 10		
Coals by canal from January 1 to November 30, 1858	18,764 15		
Decrease in the year 1858—canals	4,868 15		

**A NEW SAFETY-LAMP.**—Messrs. Wilkins and Co., lighthouse engineers to the Trinity House, &c., have just patented a safety-lamp, which appears admirably adapted to answer the purposes intended. In this lamp the flame is surrounded completely with glass or tallow. The gauze, which in the Davy lamp is continued from the level of the wick upwards, obscuring the light, commences here some 3 inches higher. The draft or circulation is maintained by the external air passing through the body of the oil-can by means of four large tubes around the wick, communicating with a lower chamber in connection with the external air through the meshes of a fine metal gauze. In this manner the circulation of air is kept up even better than in the Davy lamp itself, in which the air is admitted on a level, and directly opposite the wick. Lamps have been designed to obviate in some measure the objection to the Davy lamp on the score of darkness (the gauze surrounding the light), by introducing glass on one or more sides, still leaving the supply of air to be obtained through gauze on a level with the wick; and inasmuch as more light was obtained, so less atmospheric air was admitted, causing the light to flicker and vary. The admission of air freely and in large quantity through the body of the oil-can has not been attempted until now, nor the least advantage of which is the steadiness with which the light burns in the greatest draught. Two kinds of lamps under this patent are now being manufactured—one intended to be used in situations where the existence of explosive gases may be remedied as soon as discovered, as in sewers, gas works, &c., and the other in mines and situations where workmen are obliged to work continually in an atmosphere highly charged with explosive gas. In the first description of lamp the light is surrounded with a dioptric lens, which concentrates the rays and emits them horizontally all around; in the second the light is surrounded with tallow, or other indestructible light-transmitter, which will allow, as is common in some mines, the gas to inflame and fill the whole interior of the lamp, until it becomes red hot, when it will have to be substituted for a cold lamp, the operation being repeated as soon as the second lamp becomes too hot to be safe. The lamp has been in use by the Metropolitan Board of Works in the sewers on the south of the Thames for four months with great success, and they have also been supplied to the City of London.

**SAFETY CAGE FOR MINERS.**—At the Manchester Geological Society, on Tuesday, Mr. Andrew Knowles described a patent safety cage for mines, invented about two years ago by Mr. James Owen, when in the employ of the Earl of Ellerton at Worsley. The apparatus, a model of which was shown and worked, consisted of an appliance to prevent the descent of the cage, &c., by accident, the rope happened to break. It was in use in many of the most extensive collieries in Lancashire, and answered the purposes for which it was intended. Its recommendations were:—That its use might save life; that an ordinary smith might construct and apply it; that it was easily kept in repair, and compelled the keeping of it, so, or the cage could not work; and that it being suspended upon four springs it prevented oscillation. The objection to this kind of cage, that the weight of the broken rope falling on the cage would force it down, had been practically disproved in this case with the falling weight of 200 yards of rope. The apparatus could be used with iron conductors as well as with wooden ones.—Mr. Owen, having showed the working of his apparatus, stated that he had fixed it in nearly 200 shafts, and in each case had tested it without accident.—Mr. Dickinson, the Government Inspector, said the springs also greatly lessened the jerk naturally caused by the breaking of the rope.—Several gentlemen approved of the apparatus, and votes of thanks were passed to Messrs. Knowles and Owen for exhibiting it.

**GLOUCESTER COAL MINING COMPANY.**—An influential company is in course of formation for working some extensive colliery properties in the Forest of Dean coal field, comprising in all about 360 acres. The four collieries are well known as the True Blue, Newnham Bottom, Woodside, and Birchenside Collieries, and are situated near the village of Ruardean, and the railway, plant, steam-engines, tram-wagons, pit carts, machinery, tools, and all other necessary apparatus which, at great expense, have been lately placed on these important properties. A detailed prospectus is published in another column, and it will be seen that the annual profits are estimated at upwards of 7000/- We shall more particularly refer to the prospects of the collieries in

Blackett, and Co., to arrive, at \$5 50c., cash. Spelter is dull, and prices continue without change, the quotation being \$5 3c., six months.

**COPPER MINING COMPANIES IN THE UNITED STATES.**—Messrs. Dupee, Beck, and Sayles, under date Boston, Nov. 20, state—Since report of the 10th inst. there has been an increasing tendency to speculation in mining shares, especially in those of the Portage Lake district. The money market continues easy. Ingot copper dull at 23c. per four months; but with the very moderate supply in first hands, and the firmness with which it is held in foreign markets, no further decline at present is probable. It is not, however, improbable that the present improvement in the share market may be checked by the usual very long interval between the close of navigation and the arrival of the overland mails from the Lake.

The MINING MARKET has continued throughout the week in a state of the greatest activity, and a larger amount of business has been transacted than we have noticed for many months past. Tin has advanced 4d. per ton, and copper expected to rise, also, before Christmas. These circumstances, combined with the discoveries that have been made, render it probable that the present activity will increase, rather than diminish. Heavy dividend shares have been largely dealt in—such as West Seton, at 295 to 300, and a good demand. Bassett, 210 to 215; a dividend of 6d. per share declared at the two-monthly meeting. South Caradon, 405 to 410. Providence Mines have advanced to 65. Wheal Margaret, 60 to 61, and in request. Great Alfred have advanced from 2d. to 4, in expectation of a course of ore in the 200 fm. level. Alfred Consols more enquired for. Wheal Charlotte, to which we referred last week as likely to recommence dividends, has advanced from 10 to 17, 20, so that this mine has had a rise of 10,000£ in a week; on Thursday information was privately received that a great improvement had taken place, and shares rose quickly from 12 to 17, 20. Hingston, without any reported change, have been duller, and receded to 3, 3½. Marke Valley in request at 2d. to 2½. North Robert, 2½ to 2½; East Caradon, 2½ to 2½, buyers. South Caradon Wheal Hooper, 2½, 3, and in request. Ludcott, 2½, 6d., 45s.; East Rosewarne, 2½; Wheal Trelawny, 28 to 28½, and business doing. Wheal Mary Ann, 46 to 47. North Bassett have been more in request, at 8 to 8½; Wheal Grenville quiet, and receded from 2½ to 1½. Tolcarne, 13s. to 14s.; Bryntail, 10s., and mine rather improved. North Downs, 2d. to 2½, and large transactions taking place. West Caradon, 132½ to 135; Lady Bertha leave off 26s. to 28s. Wheal Crebor, 1 to 1½, and a very large business done. A discovery was announced early in the week on the Georgina lode, 12 fms. below the Tunnel level; the eastern end having come into ore worth 10d. per fathom, and which has subsequently improved. Above the tunnel of the Tavistock Consols this lode yielded several hundred tons of copper ore; and as this discovery is 12 fms. under it, with good backs, some importance is attached to the discovery. Another feature of the company is, that there is ample machinery on the mine for all purposes, and the expenditure, therefore, is very moderate. North Frances, 8 to 8½; driving is about commencing on a branch of ore in the 70.

East Russells leave off 6d. to 7; a good deal of interest has been attached to this mine during the week, it having been known that the lode in the 88 would be taken down for the first time since the meeting on Nov. 11. On Tuesday the shares reached 8½, but on Wednesday morning advice was received that, in putting in a piece of timber to support the level, about a foot of the lode had been seen, which did not look so well. In the afternoon, on the faith, it is presumed, of some private telegram, the shares were recklessly knocked down to 6d. On Thursday, however, the official report was received, when the truth was known, and, despite renewed attempts to depreciate the shares, they rallied to 7½, 7. It appears that on taking down the lode the first 2 fms. were worth full 20d. per fin., but the rest, up to the end, contained black and yellow ore, though not enough to value, the lode being 7 ft. wide, and very promising. The agent states that the 88 has passed through a course of ore 10 fms. in length, which is a great improvement from what it was in the level above, as it must be understood that in the upper levels there was no ore in this part of the lode. He also reports the lode in the rise in back of the 88 at 20d. per fm. Now, it must be remembered that a course of ore was never expected in the 88 until it was up to the junction of the two lodes, which has not yet been reached. In his report of Nov. 3, Capt. Chas. Thomas remarked—“The 88 end is about 10 fms. short of the point of junction of this with another part seen in the 66, where a great improvement took place. I do not expect a very decided and great improvement in this (the 66) level before that point is reached, which can be done in about five or six weeks after Homersham’s shaft is holed to this level; or, say, in two months from this date;” which would be about Jan. 3. The fact is, therefore, that the 88 having been so productive under where there was no ore in the 66, what must be looked for when the former is under the ore ground in the latter? It may be added that the lode has increased from about 7 in. in the 66 to about 7 ft. wide in the 88. Nor is the 88 the only point of interest in the mine. The 66 is nearly under some ore found in the Tunnel level, and is showing indications of an improvement, with a small leader of yellow copper ore up and down the end, varying in width from 1 to 4 in., of rich quality.” The question has been mooted, whether there be not a remedy against the practice (now becoming of almost daily occurrence in this and other mines) of depreciating the property of bona fide holders to the extent, as in this case, of 6000£ in one half-hour. We are also asked, would a shareholder, who might be induced to sell under such circumstances, be justified in refusing to deliver the stock? and whether he would have any redress at law? These are questions, however, that we cannot take upon ourselves to answer. We do our best to keep the public in possession of the true state of the mines, derived every week from official sources; and the shareholders have only themselves to blame if they allow themselves to be misled by the jobbing tricks of the “outsiders” on the market. South Carn Brea have been in considerable request, at 2½ to 3; the lode at the shaft is reported worth 2 tons per fin. Wheal Hender, 1 to 2; though the quotation is merely nominal. The mine is said to be greatly improving, and a course of ore looked for in the 2d., which will soon commence driving. Herodsfoot, 6½ to 7½; Rosewarne and Herland, 7½; Trevocle, 17 to 18; United Mines, 100, buyers; North Roskear, 21 to 22½; North Crofty, 3 to 3½; Stray Park, 3½ to 3½; South Condurrow, 4s. to 5s.; North Dolcoath, 5½ to 6; Pendine, 4½ to 4½. Wheal Wrey have been in great demand, and leave off 2½ to 2½. Tamar Consols, 2½ to 3; Tin croft, 3½ to 3½; Kelly Bray, 2 to 2½; Carn Brea, 60 to 62½; Trelawny, 22s. to 25s.; South Tolgus, 7s. to 8s.; East Tolgus, 55 to 60; Ludcotts, 40s. to 42s. 6d. In East Bassett a very large business done at prices varying from 155 to 165, and they leave off 160 to 170. Great Hewas, 3 to 3½; North Minera, 5 to 5½; South Bassett in demand at 4. Wheal Sydney enquired for at 3 to 1. West Par, 18s. to 15s., also in request. Par Consols, 16 to 17; Grambler and St. Aubyn, 130 to 135; Gomena, 8; Craddock Moor, 28 to 30; South Frances, 230 to 240; St. Day United, 10s. to 11s.; Vale of Towy, 11s. 6d. to 12s. 6d.; St. Ives Consols, 30 to 35.

At Redruth Ticketing, on Thursday, 4109 tons of ore were sold, realising 25,160£ 10s. 0d. The particulars of the sale were—Average standard, 136s. 9s.; average produce, 6½; average price, 6½, 2s. 6d.; quantity of fine copper, 267 tons 4 cwt. The following are the particulars:—

Date.	Tons.	Standard.	Produce.	Price per ton.	Ore copper.
Nov. 11	3704	£133 1	6½	£5 15 0	£90 1
" 18	4486	134 14	6	5 6 6	88 15
" 25	3285	135 10	6½	6 0 6	93 0
Dec. 2	3708	134 14	6½	6 3 0	93 3
" 9	4109	136 9	6½	6 2 6	94 3

Compared with last week’s sale, the advance has been in the standard 11s. 7s., and in the price per ton of ore about 1s. 9d. Compared with the corresponding sale of last month, the advance has been in the standard, 31s. 6s., and in the price per ton 4s. 10d.

In the COAL MARKET, during the past week there has been a considerable decline in the price, the quotations on Monday being—Best Wallsend, 18s.; second quality, ditto, 16s. to 17s. 3d.; manufacturers’, 13s.; and Hartley’s, 14s. to 15s. The number of ships at market was 174, of which number only 48 were left unsold. On Wednesday there was a good supply, 154 ships being at market, 118 of which were sold, but the prices remained without alteration. Yesterday, there was a great falling off in the supply, only 66 ships being at market, 48 of which were sold at an advance on former rates, the closing prices being—Best Wallsend, 18s. to 18s. 6d.; second quality ditto, 16s. 3d. to 17s. 6d.; manufacturers’ 12s. 6d. to 15s. 6d.; Hartley’s, 14s. 6d. to 15s. 6d.

**COAL CONTRACT.**—The Consulate Generale of France require tenders for the supply of 2,500,000 kilos. of Newcastle coal, and 1,500,000 kilos. of Cardiff coal, for delivery at Cherbourg.—Dec. 27.

In SALTPETRÉ, during the past week there has been very little doing, but previous prices have been fully maintained, holders refusing to sell except at an advance. The only sales we hear of are 479 bags of Bombay, 11½ per cent. refraction, at 41s. 6d., and 250 bags of fine qualities by private contract, terms not known. On Wednesday 680 bags of Bengal, 9½ and 11½ per cent. ref., was bought in at 41s. 6d. to 41s.; and 232 bags of Bombay, ref. 80½ per cent., at 30s. During the past week 168 tons have been landed, and 274 tons delivered, leaving 2420 tons in stock, against 6756 tons at the same time last year.

**CONTRACTS FOR SALTPETRÉ.**—372 tons of refined required by the Belgian Government, and 200 tons by the French Government.

At Wheal Basset meeting, on Tuesday, the accounts showed—Balance last audit, 1389£ 8s. 9d.; ore sold (deducting dues), 6645£ 4s. 7d.; discounts, 61. 1s. 7d.; 3041£ 7s. 1d.; mine cost for Sept. and Oct., 2707£ 16s. 10d.; merchants’ bills, 799£ 16s. 3d.; leaving credit balance, 4533£ 15s. 10d. The profit on the two months’ working was 3144£ 7s. 1d. A dividend of 3072£ (6d. per share) was declared, and 1461£ 15s. 10d. carried to credit of next account. The agents reported that on the middle 10s. lift was yielding a little tin. The 75 east was yielding saving work for tin, and opening tribute ground. The 65 east was worth 1½ ton of copper ore per fin. The 65 west was yielding stones of tin. The 55 east is saving work for tin, tribute ground. In the 45 east they were opening good tribute ground. The pitches in this part of the mine on copper and tin are still looking well, and producing the usual quantity.

At Great Wheal Vor meeting, on Wednesday (Mr. G. Noakes in the chair), a call of 10s. per share was made, payable forthwith, and it was resolved to continue the working of the mine. Thanks were voted to Messrs. Petherick, Gill, Bryant, and Tredinnick, for their reports; and the committee, managing-director, and auditor were re-elected. A report of the proceedings will be found in another column.

At the Pembrokeshire and East Crimis Mine meeting, on Wednesday (Mr. Margetson in the chair), it was agreed that the Pembrokeshire portion of the mine should be abandoned, inasmuch as a large sum of money, derived from the East Crimis Mine, had been expended thereon without any satisfactory result. The sale of the materials, it was estimated, would realise about 3000£. It was thought that in three or four months every liability would be liquidated, and this mine would become an increasingly valuable property. A call of 1s. per share was made.

At the United Mines meeting, on Dec. 1, the accounts showed—Ores sold from Aug. to Oct., 7702£ 15s. 8d.; sundries, 448£ 3s. 1d. = 8150£ 18s. 9d. Balance last audit, 763£ 6s. 1½; mine cost for Sept. and Oct., 2752£ 14s. 6d.; tributaries’ balances, 1229£ 13s. 6d.; merchants’ bills, &c., 3509£ 5s. 10d.; leaving a credit balance, 895£ 18s. 11d. There was a profit upon the two months’ working of 1659£ 4s. 11d. Capt. J. Davey reported that they were raising in Wheal Moon about 150 tons of muriatic per month. They expected to make the same amount of profit for Nov. and Dec. as in the two preceding months.

At the Carn Galver Mine meeting, on Dec. 2, the accounts showed—Balance last audit, 342£ 7s. 9d.; arrears of call, 17½; mine cost from July to Sept., 542£ 9s. 11d.; merchants’ bills, 321£ 15s. 6d.; leaving debit balance, 216£ 7s. 3d. The new lode in the Bosigran set, in the 60, had been driven on cast and west about 12 fms., and there was a cross-cut in progress from the 40 towards the new lode.

At the East Ellen Mine meeting, on Tuesday, the accounts showed—Balance last audit, 342£ 7s. 9d.; arrears of call, 17½; mine cost from July to Sept., 542£ 9s. 11d.; merchants’ bills, 321£ 15s. 6d.; leaving debit balance, 216£ 7s. 3d. The new lode in the Bosigran set, in the 60, had been driven on cast and west about 12 fms., and there was a cross-cut in progress from the 40 towards the new lode.

At the South Wheal Seton meeting, on Dec. 2, the accounts showed—Balance last audit, 378£ 12s. 2d.; mine cost July, 12s. 6s. 3d.; Aug., 14s. 17s. 5d.; Sept., 130£ 18s. 9d.; Oct., 117£ 8s.; merchants’ bills, 305£ 9s. 10d. = 1291£ 7s. 6d. Call received, 809£; sundries, 27. 1s. 6d.; leaving debit balance, 302£ 14s. A call of 27 per share was made, payable forthwith. Capts. M. Bath and E. Higgins reported that rods had been attached to the engine-shaft at the surface, and drained Tippet’s shaft on the counter lode. Marriott’s shaft having been sunk to a sufficient depth below the 12, they proposed cutting a plat at their present bottom, bring down their skip-road, for a new lift, and other necessary pithwork.

At the East Providence Mine adjourned meeting, held at the Auction Mart, London, on Tuesday (Mr. T. Boorman in the chair), the accounts showed—Balance last audit, 1314£ 6s. 4d.; mine cost, 1214£ 6s. 3d.; Aug., 147s. 17s. 5d.; Sept., 130£ 18s. 9d.; Oct., 117£ 8s.; merchants’ bills, 305£ 9s. 10d. = 1291£ 7s. 6d. Call received, 809£; sundries, 27. 1s. 6d.; leaving debit balance, 302£ 14s. A call of 27 per share was made, payable forthwith. Capt. J. Davey reported that the future costs would be about 170£ per month, the prospects of the mine being much the same as at the last meeting, and that nothing new could be expected until the shafts are sunk deeper and the levels opened on the lode. Since the last meeting all the erections and other surface works have been completed. A resolution was passed to the effect that no alteration was to take place in the mode of transacting the business of the mine.

At South Cremer meeting, on Monday, the accounts showed—Balance last account, 111s. 10s. 2d.; calls received, 1143£ 11s. 4½; copper ore sold, 357£ 8s. 6d.; other receipts, 110£ 12s. 2d. = 1623£ 12s. 8d.—Paid labour cost, September and October, 1242£ 6s. 3d.; tribute, 75½; sundry merchants’ and acceptances, 156£ 9s. 6d.; leaving a debit balance of 1311£ 4s. A call of 27 per share was made, payable forthwith. Capts. W. Hollow and T. Uren reported that the future costs would be about 170£ per month, the prospects of the mine being much the same as at the last meeting, and that nothing new could be expected until the shafts are sunk deeper and the levels opened on the lode. Since the last meeting all the erections and other surface works have been completed. A resolution was passed to the effect that no alteration was to take place in the mode of transacting the business of the mine.

At the General Mining Company for Ireland meeting, in Dublin, on Monday, the accounts showed—Ore on hand at the commencement of the half-year, 1242£; stores, 162s. 6d.; mining disbursements, 1718£; office and other expenditure, 169£. 328£.—Ore sold, 1733£; ore now on hand, 111£ 12s. 8d.; stores, 185£; leaving a debit balance of 251£. It was stated that the sulphur mines at Knockmealdown presented a favourable aspect, and that an expenditure of about 300£ in unwatering the mine would render it more remunerative than hitherto. At the copper mine of Ballinlough favourable results were anticipated; Gurnardine was producing about 1 ton of lead and from 1 to 2 tons of copper per week. At East Shallow, the wheel-pit has been completed. The prospects of further developing the resources of their property, and increasing its value, were more favourable than they had been for some time. With respect to the working of the property for the last half-year, although the profit had been trifling, still a profit had been realised, which was apparent from the fact that 200£ of the expenditure had been of a purely speculative character; and the actual working of the property for the half-year showed a small profit of about 300£. Capt. T. King reported that at no time had he seen so many places presenting every prospect of a speedy and favourable change. Their machinery was in good working order. Materials were being prepared for the construction of a railway from the Gurnardine crusher to the Jigging machines; and it was expected, with the ore raised at Ballinlough and Gurnardine, to keep the crusher constantly employed.

At the New Wheal Frances Mine meeting, on Nov. 21, the accounts showed—Balance last audit, 761£ 19s. 7d.; mine cost, from July to Sept., 1491£ 9s. 7d.; merchants’ bills, 341£ 19s. 11d. = 251£. 9s. 1d.—Call, 236£; leaving debit balance, 51£. 9s. 1d. A call of 5s. per share was made, payable within 14 days. Capt. J. Eddy thought the adventurers had a good piece of mineral ground, which should be developed vigorously.

At Tavy Consols Mine general meeting, held at the Auction Mart, on Thursday, it was agreed to place the management of the mine under the Joint-Stock Companies Act of 1856, with limited liability. Mr. J. S. Hemming, of 23, Moorgate-street, was appointed secretary, with instructions to take the preliminary steps for effecting the same. A call of 3s. per share was made, and arrangements for developing the mine proved so rich in Lady Bertha, the adjoining mine.

At Redmoor quarterly meeting the accounts showed a balance in hand of 115£. 19s. 4d.; assets over liabilities, 218£. 4s. 1d. In the assets, however, credit is not taken for lead and copper ore to the value of about 600£, nearly ready for sale, and the greater part of the costs upon which have been charged. A call of 6d. per share was made. The report stated the returns for the three months had been 25 tons of No. 1, and 115 tons of No. 2 lead ore: 17 tons of No. 1 and 10 tons of No. 2 would be ready for sampling early next week.

At the Nantoco and Penrhian Consolidated Mines Company meeting, on Wednesday (Mr. J. W. Williamson in the chair), the cash account showed—Balance last audit, 137£ 10s. 7d.; calls received, 1375£ 5s. 6d.; lead ore sold, 660£ 3s. 6d.; loans and interest, 490£. 2s. 6d. = 2449£ 2s. 1d.—Labour cost, 1019£ 10s. 8d.; merchants’ bills, 236£ 2s. 8d.; lords’ dues, 65£. 1s. 6d.; loan and interest, 588£. 9s.; office expenses and sundries, 168£. 8s. 1d.; leaving balance in hand, 323£. 19s. 2d. A report from Capt. J. Roach, of a highly satisfactory character, was read. It was resolved that the shares in arrear be forfeited, and the meeting was adjourned to Dec. 21.

At the Robin Hood Mining Company (Matlock) half-yearly meeting, the accounts showed—Calls, 291£. 5s.—Mine cost, &c., 226£. 8s. 4d.; arrears of call, 222. 10s.: leaving a credit balance of 45s. 6d.

At the St. John del Rey Mine meeting, yesterday (Mr. J. D. Powles in the chair), the accounts from March to September showed a profit of about 4131£, but which had not yet come to hand. The quantity of ore stamped during the half-year had been 41,901 tons, being a larger quantity than had been operated on during any previous six months, but the standard was lower than it had been for several years. They had standing at the western part of the Bahia some 96,000 tons of lode. The western part of the mine, Capt. Treloar felt warranted in stating, promised to be a great acquisition to the company.

At the East India Coal Company meeting, on Wednesday (Mr. W. S. Austin in the chair), it was agreed that a dividend of 7½ per cent. be declared, payable on March 1, or as near thereto as possible, and that the directors be empowered to reduce the same if unforeseen circumstances should occur. Mr. H. Hayman and Mr. Haviside were elected directors. The sum of 750£ was voted to the directors for services rendered. The prospects of the company were stated to be of an encouraging character.

In Foreign Mine Shares, during the past week there has been but very little doing, and prices for the most part continue firm, the principal feature being a considerable improvement in Imperial Brazilian and United Mexican. St. John del Rey has been well in demand. Caledonian Consolidated has been in request, at 5s. 6d.; East India Coal, 6½ to 7½ per cent. The North Rhine Company of South Australia were freely acquired after, at 3½ to 5½ per cent. The St. John del Rey report states that the produce of gold for the six months ending Sept. 17 had been 139,811 ohs., while the produce for the corresponding period of 1857 was 129,498 ohs.; the profit for the above-named period, as shown by the Morro Velho account, is about 4131£. The quantity of stone stamped during the half-year has been 44,901 tons, being a larger quantity than has ever before been operated on during the same space of time: the shares are quoted at 9, 11. Copiapo, 10, 12; Cobre Copper, 38

## THE PROGRESS OF MINING IN 1857,

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## Notices to Correspondents.

Much inconvenience having arisen, in consequence of several of the numbers during the past year being out of print, we recommend that the Journal should be regularly filed on receipt: it then forms an accumulating useful work of reference.

PRACTICAL MINING—ORE DRESSING.—My attention has been directed to the letter of "Scrutator," in your Journal of Nov. 27. Circumstances beyond personal control have prevented the fulfilment of my promise to give you a history of my invention. As soon as possible you shall have it. In the meantime allow me to refer your correspondent to your Journal for March 13, of this year, and to another Number of a week or two previous date, for a full disclaimer on my part of having been in any way indebted to Alkin's *Dictionary*, and a denial that I could find in it anything that could have assisted in the development of the invention. If your anonymous correspondent thinks different, I shall feel obliged to him, or any one else who will point out the supposed germs of the invention. That my invention is not entitled to the classification hinted at by your correspondent, is proved by the fact that my process has been continuously in operation at Drake Walls Tin Mine, Gwalia Lake, near Calstock, about ten years. Before the introduction of my process the tin ores raised at this mine fetched the lowest price of any in Cornwall; now they obtain the highest price, of course to the great advantage of the mine.—ROB. CUELL: *Plymouth*, Dec. 7.MINERALS IN CANADA.—An interesting discovery has been made in Nova Scotia by Mr. Henry Poole, who has been sent to that Island to survey a proposed line of railway from Halifax, to connect with the Canadas more readily. He says: "Beneath our workable coal seam I have met with a layer of compact bituminous shale, which yields by experiment 16,000 ft. of oil to the ton. When held to a candle it burns freely, drops off like pitch, and smells like burnt beef—specific gravity, 1.104. I think it might be worked to advantage for making paraffine oil. I am anxious to know the best mode of distilling it, and of obtaining the oil. In the *Mining Journal* of Sept. 25, I saw an article on the Kimmeridge coal, and, if possible, should like to obtain the particulars of the plan of distillation adopted." Any information on this subject from your correspondent will be esteemed a favour, and be responded to.—G. H.WHEAL BRAY.—In reply to the enquiry respecting operations in this mine, I beg to state that at present we are sinking the engine-shaft, which is just completed to the 80 ft. level, the sinking of the last 20 fms. of which was performed in five months. In about six weeks we expect to cut the lode in this level. We are also driving the 50 fm. level from the engine-shaft as fast as possible towards the ore ground laid open in the 30 fm. level. In addition to this, we are sinking a wing below the 30 fm. level, 40 fms. to the east of the end just mentioned, on the side of the lode. This wing is some 7 fms. below the 30 fm. level, and the lode when cut through near the bottom is worth 10/- to 12/- per fm., and changing from black to grey and yellow copper ore.—S. BENNETTS: *Dec. 8.*WHEAL ZION.—I happen to hold some shares as a trustee in this mine. I was accustomed, through the medium of your Journal, occasionally to read the reports of the meetings. I thought when we purchased the Globe that a better day was dawning for us. For a long period I have observed no notice of the mine. Probably some of your correspondents may inform me whether Mr. Price has put his long-threatened motion into effect, of winding-up the company.—D. H.: *Bath*.GOLD REDUCTION.—In your Notices to Correspondents, in last week's Journal, a "Mine Proprietor" wished for some information respecting my patent process for smelting aniferous quartz, and other substances. I beg to inform him, and others, that full information has been given from time to time in your Journal upon the mode of operations, and when and where large trials were made, and in every instance with the most unqualified success. In another part of your Journal, in a letter under the signature of "An Old Smelter," the writer (whoever he may be) seems to be fully conversant with my process, as his observations are perfectly correct, and under these circumstances it would be useless for me to occupy the valuable space in your columns with explanations which can be far better given to any person who is interested in the question of Gold Reduction by my process either by communicating with me personally or by letter, at my laboratory.—CHAS. LOW: *St. James-road, Holloway*.WHEAL GUSKIN.—The object of the concours of the late meeting, however, appear to be to admit claims which had been disallowed by the Stannaries Court, and to make a call, so as to afford a double handle for the said creditors to take in hand any unfortunate shareholder they may select for process. But has any clique in any company power to make valid against the whole body of shareholders claims which have been disallowed by the powers specially authorised to determine such matters? Why were the circumstances, as they transpired before the Stannaries Court, kept in the back ground? That Court has power to settle all the matters of this and every such company within the limits of its jurisdiction, upon equitable grounds. But the judge may, if he thinks it advisable, hand over the task to the Court of Chancery for settlement. Until he has expressed himself, the affairs of the company, as it appears to me, can not be taken into Chancery, and it only remains for the shareholders to take such steps, for their mutual protection, as shall ensure the full powers of the Stannaries Court, being brought into effect in the case of this mismanaged adventure.—E. W.: *Dec. 8.*WHEAL GUSKIN.—In answer to "Your Reporter's" letter of last week, referring to the meeting of the above mine, held on Nov. 17, I would beg of you to observe that no such argument was used, "that, in consequence of the Decree of the Stannaries Court, there being no mine, no one was empowered to make a call." It was contended that, as the mine and machinery had been taken possession of, and the materials sold by the Registrar of the Court, and the proceeds divided among the claimants, he, having the winding-up of the affairs of the company, is the only competent person to make a call for any balance remaining unsettled (which, in all probability, will be done), having the power to fix the contributors and the amount per share. The statements offered at the meeting were grounded upon the opinions of two solicitors, who had considerable practice in the Stannaries Court, and, consequently, fully capable of explaining the true position of the company.—A. SHAREHOLDER: *Dec. 9.*WHEAL GUSKIN.—I have no wish to enter into the dispute concerning this mine either with the shareholders, Mr. Berry, or Mr. Jeffreys, but in justice to the last-named gentleman I must correct an error Mr. Berry has fallen into, that the meeting was usually called by advertisement in the *Mining Journal*. I had always advocated that this should have been done, as it would have saved the wasteful expenditure incurred by sending out circulars to the shareholders: the latter was adopted, and not the former, which would have afforded greater publicity at a less expense. Before this unfortunate concern had finally wound-up, we may expect further litigation. I can only say that for the benefit of all parties the sooner a solution of affairs is arrived at, and that at the least possible cost, it will be to the advantage of all concerned.—G. M.: *St. John's-road, Wood*.

GOLD IN ENGLAND.—"A Mine Proprietor" enquires whether any of the processes for obtaining gold in England were carried out? If he would refer to the Journal of 1854, he would there see that Mr. Berdan obtained gold from Cornish ores. A company was formed for the purpose of working his patent, of which Mr. Hyde Clarke was then secretary, and probably from that gentleman he might obtain some useful information. At the same period Mr. John Calvert, who exhibited his nuggets at Wyld's Great Globe, enunciated the theory of gold in all the granite rocks of England, and professed to extract it by means of electricity. There is no question that gold has been found at Dolgellau, in North Wales, in the lead mines there, but whether this is continuous is a matter of speculation. Mr. Joshua Harris was some time there, and I believe while he had the management of the Ffynnon Works his magnets rotated so as to obtain gold. It is to be deplored that, owing to the apathy of the public, the inventions of these gentlemen have not been fully tested, and their merits known. While thousands of pounds are thrown away on foreign adventures we neglect native talent.—J. B.

IRON IN SUSSEX.—As a Sussex man, I feel interested in your article of last week upon this subject; but I do not find any mention of the ancient workings in Ironham Forest, of which vestiges still remain. And between Glendale and Rudgwick there is a building called "Furnace House," from the same cause, about which, and in the neighbouring fields, cluders, &c., are still to be shown. The refuse from these works were used for the purpose of repairing the adjoining roads, of which there are many indications existing.—F. BRAY: *Fitzroy Works, Euston-road*, Dec. 10.MANUFACTURE OF STEEL.—I have read the letter of "One Interested" in your last Journal, and certainly think that if a company were formed—the mutual understanding between the patentees being first obtained—the public would readily subscribe the necessary capital.—J. M.: *Newport*.LEAD.—A short time ago there appeared in your Journal some comments on the article "Lead," written by Dr. Muspratt in his *Dictionary*, and "A Lead Smelter" enumerated some substances of which it would be of great service to the smelter to know the composition, which the Dr. had not noticed at all; and a Mr. Tuson, of London, offered to supply the desideratum, if samples were forwarded to him, and publish the result in your Journal. As I have not seen any publication of the kind, may I enquire if Mr. Tuson has been supplied with the samples in question? because if he has not, I think those who have the means of doing so should not lose such an opportunity as he offers.—A.

CAMBORNE VEIN MINES.—We cannot insert the communication from Mr. J. E. Jones, Camborne. The charge against Mr. W. Vawdrey are of far too personal a nature, and the letter altogether unfitted for publication.

MR. SQUIRE'S PROCESS OF PREPARING ORES FOR REDUCTION.—Messrs. Johnson and Sons present their compliments to the Editor of the Journal, and beg to say that they do not answer any notes in a public journal relative to the affairs of their employers without their full consent, and that it is a rule of their house not to seek such permission until such affairs have been made public by the proper persons. Messrs. Johnson and Sons beg to refer the readers of the Journal to the approaching meeting of the Quartz Reduction Company, where they have no doubt the correctness of their assays will be fully discussed.—*Basingstoke-street*.

Mr. A. Ennor, of Pengenna, North Wheal Robert, East Wheal Russell, &amp;c., reached us too late for this week's Journal.

GOVERNMENT SCHOOL OF MINES—"Miner."—The requisite information may be obtained by addressing a communication to Mr. Trenham Reeks, at the Museum of Economic Geology, Jermyn-street, S.W. The lectures commence in October, and generally terminate in the middle of June.

MOUNT OF CARBON MINING COMPANY.—I had anticipated that I should have seen some notice of the proceedings of this association. We had a president and directors, then a committee of investigation, afterwards we were told that a capitalist had advanced a large sum of money, in order that the work should be carried out. Mr. F. W. Bennoch was one of our directors, owing to circumstances which it is not necessary here to allude to he retired during the past year. Surely by some person a statement ought to have been put forward as to the cause of the suspension of the works. We have heard in California of several undertakings being mortgaged. A letter appeared some time since stating that neither the captain nor the miners had been paid by the Chanceryville Company. I have always advocated that it was better that English capital should be disbursed in British enterprise. If, however, individuals think fit to embark their money in foreign speculations, at least they ought to fulfil their engagements, and keep our name and honour intact. In several instances which have lately come to my knowledge I regret this has not been the case. With regard to the Mount Carbon, as the shares were soon broadcast over the country, I think it is only due to the proprietary, scattered as they are, that some information should be afforded to them through the medium of your widely-circulated journal.—B. J.: *Glasgow*.ALTEIN MINING ASSOCIATION.—Recent accounts have shown us that the property is in a good condition. We now know the causes which led to its temporary depreciation; let us avoid them for the future, and restore to old Alten its ancient prestige.—W. B.: *Cornhill*.

NEW TREBLEIGH MINE.—Capt. John Prince's report, in last week's Journal, should have read thus:—"Our next sampling, which will be larger, and most of the ore better than the last, will take place on the second Tuesday of this month."

TREVETHICK'S FIRST LOCOMOTIVE—"G. A." (Truro).—The diagram referred to is that of an engine made by Trevethick two or three years before that which was used on the common road in Cornwall. It is published at the *Mining Journal* office, and will be forwarded through the post upon "G. A." remitting 12 receipt stamps. A diagram of Stephenson's First Passenger Locomotive is published by Mr. Mawson, chemist, of Newcastle-on-Tyne—the price is about 2s. 6d.CANDIGAN SOUTH MINING COMPANY.—Absence from the mine prevented my seeing your Journal of Nov. 27. In answer to a "Would-be Miner," the offices of this company are 3, Newhall-street, Birmingham, where every information may be obtained.—W. G. H.: *Pontrhydfendigaid*.

ROYAL SANTIAGO COMPANY.—In reply to your correspondent, and as the advocate of a poor orphan who has had invested nearly 2000/- in this property, I agree with him that the interests of the present proprietary claim the first consideration, and in the event of any re-arrangement of the company ought to have their amount in free shares. I propose that the shares be 20,000, limited to 5/- each, the 7000 to stand as paid-up shares, which will give a value of 35,000/- for the mines, houses, materials, &amp;c., and which is far below the real value thereof, but the last call should be returned to those who have paid it.—A. SHAREHOLDER.

STEAM-BOILER ASSURANCE COMPANY—"F. A." (Truro).—It will be seen by the advertisement in last week's Journal that Mr. Longridge will undertake the duties of chief engineer. The company, we believe, will be ready for work at the commencement of 1859. We shall be enabled to publish further particulars in our next Journal.

QUARTZ REDUCTION COMPANY.—In your last Journal I observe a communication from Mr. W. J. Vian, the secretary of this company, stating that a letter concerning the reduction of the quartz belonging to this association was published without his sanction. In my opinion, we have at present only two things to consider, as the directors afford us no prospect of ever obtaining a dividend. Mr. Squire states we ought to be the richest company in the world; and says that the brown oxides in our quartz contain gold. Col. Kennedy, when he went to Walworth, said he was convinced of the feasibility of the project. Mr. J. H. Clement, a practical man, at the London Tavern said Mr. Squire had obtained gold where he could not; and it must be borne in mind that Mr. Clement is no mean authority, as, while in the service of the Nouveau Monde Company, he mentioned that he walked over the precious metal. I would now ask what is the cause of this delay? Is the property mortgaged; or are we to lose it, like the Anglo-Californian, by a transfer to a Kerry miner? Surely neither Mr. Vian nor any gentleman at the board can imagine that we shall ever advance another shilling in order to realise the Tantallian fortune, which we have been expecting this last seven years. Let the remaining funds we have be employed in testing the value of the process of Mr. Squire. I candidly confess I have no great faith in its success, nor have I that we shall ever attain profitable results from California. I wish, however, that the state of suspense we have been in for so long a period should be terminated. Our present capital is inadequate for any useful purposes, and therefore, the sooner the company is wound-up, or set going in the flourishing manner Mr. Squire anticipates, the better for all parties. I and several of the other shareholders wish to arrive at this knowledge—is our little investment entirely gone; or are we to be rich men?—P. E.: *Eccles*.TREWARE UNITED.—With reference to the enquiry of "B. L." (Bath), I beg to state that as soon as the engine is sold a small balance will be divided; but I have not had an offer for the engine, though advertised several times in your Journal and in the Cornish papers.—W. H. RICHARDS: *Redruth*, Dec. 8.EAST RUSSELL.—I observe that Capt. Goldsworthy has very properly corrected Mr. Ennor as to the height of the backs from the 60 to the 55, but the captain generously says nothing as to who is to blame for any mistake which may have been made. Now, I would mention that it was done before Capt. Goldsworthy had anything to do with the mine, and during the management of the agent so strongly supported by Mr. Ennor some time ago.—R. S.: *Tavistock*, Dec. 8.

WHEAL GUSKIN.—Mr. A. Jeffreys's letter has been received, and is under consideration.

## THE MINING JOURNAL

Railway and Commercial Gazette.

LONDON, DECEMBER 11, 1858.

"It was a beastly hole for any human being to go into," is the graphic description of the Cae Colliery, which, according to the local papers, was given by Her MAJESTY's Inspector of Mines in his evidence to the coroner's inquest on the bodies of the ten hapless men who were drowned in this pit. We are further told, on the same high authority, that there were no plans kept, and that the rules had been entirely disregarded. The most extraordinary piece of evidence, however, is that in which the reporter makes the Inspector say—"the person who managed the underground works must have known that to approach those old works was a dangerous operation without bore-holes," and afterwards adds—"in the present instance DAN. FRANCIS, who had undertaken the underground management of the pit, had had his life sacrificed to the accident, which clearly showed that he had great faith in his opinion that they were a great distance from the water in the old workings." It is not for us to estimate lightly the logical acumen of a Carmarthenshire jury, but we cannot but fear that they had some difficulty in reconciling such paradoxical evidence, for if poor FRANCIS must have known that it was dangerous, how does the mere fact of his having been killed by the accident "clearly show that he had great faith in his opinion that they were at a great distance from the water in the old workings?"

If such were really the evidence given to the jury by one of Her MAJESTY's Inspectors of Mines, we are at a loss to conceive of what possible use such evidence is, unless indeed, it be to puzzle and perplex a jury which is sworn to give a true verdict according to the evidence.

The inundation of this colliery resulted solely from the most heedless and culpable carelessness, to say the least of it. Although no plans belonging to the lessees were in existence, it appears that a plan was kept by the lessor, to which access might have been had. So recklessly were the works conducted that the east heading had actually been driven to within 8 in. of the old workings, so that if the water had not burst in from an old top-hole, it must inevitably have done so in the heading. The men were thus exposed to almost certain destruction, without even the slightest efforts being made to avert it. In addition to this we are complacently told by the Inspector that the rules had been entirely neglected, and that the pit was a beastly hole for any human being to go into."

Had we not been told this, had we not official authority for its truth, had

not ten human lives been sacrificed as the natural and inevitable consequence, we should have thought it to be incredible. That a colliery should be permitted to be worked in such a state, and under such circumstances, is most disgraceful. A more wanton disregard of the ordinary means of safety, and a more heedless sacrifice of human life, we are unacquainted with, although well read in the sad history of accidents in mines. After obtaining the Inspection Act, which amply provides for the prevention of such a state of things, we confidently hoped for a diminution of accidents, and an improved system of conducting colliery workings. And we contend that the provisions of the Act are such as to compel this improvement, were the law only administered with ordinary intelligence and energy.

It is at best an ungrateful and distasteful task to find fault with public officers, more especially as we for many years, amid great opposition, urged publicly advocated their appointment, yet the deep sense we entertain of the public duty impels us to comment freely on their public conduct, when we deem it imperils the interests of humanity and the success of a measure we have so much at heart. As regards the Inspector for South Wales, we are more than ordinarily reluctant to say one word of censure, inasmuch as we were honestly opposed to his appointment to the office he now holds, and did not withhold the reasons of our opposition from our readers. After having done so we were disposed to do him full justice in his executive capacity, and should have rejoiced had experience proved that our objections were unfounded. It is, therefore, with regret that we refer to the inundation of the Cae Colliery, to the eruption of noxious gases into the Primrose Colliery, and to the explosion in the Cyngy Colliery, all of which have recently occurred in his district, and to be obliged to add that in none of these instances, according to the reports, had there been any previous inspection by us. We are not, therefore, straining an argument when we say that the loss of these lives is to be attributed to non-inspection.

To leave no doubt on this subject, every one versed in mining will appreciate that the prevention of the Cae inundation was practicable, and that had inspection taken place before the accident it would not, or at least ought not, ever have happened. We are not, therefore, straining an argument when we say that the loss of these lives is to be attributed to non-inspection.

Again, if we refer to the Cyngy Colliery we find Mr. EVANS denouncing the system of ventilation as bad and dangerous. He recommended certain alterations and improvements, which have been well and promptly carried into effect, and the result, we are told, is that from being one of the most dangerous it is now one of the safest and best ventilated collieries in the district. This being so it can scarcely be denied that the sacrifice of six lives in this instance might have been prevented by an inspection previous to the explosion.

It thus appears that 30 lives have been lost, which might in all probability have been prevented had the colli

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ing speculators to revenge themselves for their losses on the brokers and City men whom they employ. It will show those waspish people they must not on slight and frivolous pretence drag a man before the public, and endeavour to blast his character by unfounded and vindictive allegations. When a broker really is guilty of misconduct, the law against him is sufficiently sharp, short, and decisive to meet every exigency of the case, but in cases similar to the present the successful defence of Mr. STEVENS has insured to City men of business a forensic protection, stable, sound, and invaluable.

Mr. HANCOCK, the legal adviser of Mr. STEVENS, with consummate ability and tact, elicited the proof of perjury against SOLOMONS, which at once threw discredit on the whole of the allegations in the petition, and leaves us at liberty to assume that the respondent's version of the affair is the true one; and Alderman COPELAND, in commenting on his evidence, stated that "nothing more frightful ever came before the Court." The result points the moral: the petition of SOLOMONS was dismissed, and the City Solicitor was ordered to indict him for wilful perjury.

## OUR AUSTRALIAN TRADE.

By reference to the statistical documents published by the Government in connection with the trade and commerce of the country, and considering our Australasian possessions specially, we find that the total amount of imports from these colonies during the past year of 1857 was 5,815,305L, without reference to gold, which of itself was about 10,000,000L, and from these documents it appears that the aggregate for the year 1854 was 4,301,868L, consequently showing that there has been an increase during the last three years of 1,513,437L. The exports for the same period of 1857 gave a total value of 13,175,125L, whilst in 1854 it was 13,405,986L, so that last year was less by 230,861L, thereby indicating the advance made by these colonies to provide much of their own requirements. The different colonies, taken individually, show that the imports from Victoria in 1857 amounted to 2,472,479L, and the exports thereto 7,511,110L, being 6,649,286L British and 861,824L foreign goods. From New South Wales the imports were 2,035,386L, and the exports thereto 3,596,595L, being 3,130,709L British and 465,886L foreign goods. From South Australia the imports amounted to 653,180L, and the exports thereto 988,610L, being 913,117L British and 75,493L foreign goods. From Tasmania, the imports were 563,113L, and the exports thereto 594,979L, being 509,242L British and 85,737L foreign goods. From Western Australia, the imports were 43,927L, and the exports thereto 75,627L, being 65,740L British and 9887L foreign goods; and from New Zealand the imports amounted to 157,220L, and the exports thereto 408,204L, being 364,430L British and 43,774L foreign goods.

We have already mentioned that the imports of gold are not included in these figures, but the exports of copper and other base metals from these colonies form part of the aggregate sums. It is worthy of mention that while the production of the precious metal from the gold mines of Victoria have not advanced since 1854, the yield of copper from the mines of South Australia have considerably increased, the returns showing that the total value of copper imported in 1854 was 99,937L, whilst in 1857 it amounted to no less than 380,257L.

## A GOLD REVIVAL.

To private enterprise are we indebted for some of the most useful applications of the arts and sciences, and it would appear that mining in its most subtle nature is also destined to be again operated on through the same source. This is certainly but renewing an old labour, and possibly those griefs and disappointments to which we have had a few years since so frequently referred; but, nevertheless, the spirit of speculation having taken possession of two or more private individuals, the auriferous deposits of the sister isle are selected as a test for their capital, skill, and perseverance.

It is almost venturesome to write on the British gold question at the present day; and, after the many failures from which it has derived such unenviable notoriety, it really looks like temerity itself to "prospect" even the most favoured spots of our home gold tracts.

The adventurers on this occasion have the merit of fortitude, if not of wisdom, in their choice of an industry, and while wishing for them that good fortune which is said to attend the bold and determined, one cannot help feeling nervous about the results. If, however, as is alleged, some peculiar process of extraction will be brought to bear on their labour, the doubts and fears are somewhat lessened, and all will rejoice at the solution of a long "vexed question." Still, in the absence of all knowledge of their *modus operandi*, it being kept for the present an *occult* science, we must subject all hope to the strict rules prescribed by our experience of the past. At the same time, no one will pretend to call the exploring for gold in Ireland a mere chimera; there is abundant evidence of the existence of auriferous deposits. On the estates of the Earl of WICKLOW, and in the localities of Ballintemple, Killahur, and Ballinlly, in the county of Wicklow, gold has been found in considerable quantity, and one nugget, many years ago, was discovered which weighed 22 ozs. Other pieces, of from 5 to 9 ozs., also rewarded the gold-seekers of the day; but, on the whole, it was computed the expense of the labour exceeded the returns, and to such an extent that "as dear as Wicklow gold" became a local proverb.

It has been advanced very gravely that this country can afford to leave whatever mines of precious metals she possesses untouched and unexplored. This is, however, taking but a very narrow view of a great question. On the contrary, every community is bound to develop as fully as possible the resources of the position in which it is placed, and no country can afford to leave any one of them unexplored. Such neglect inevitably brings its own punishment; and should it fortunately occur that a new light will be thrown on gold mining by the energies and abilities of the private adventurers now alluded to, who can say what public good may not arise from their industry, and what discoveries of the precious metal may not be made in our mineral districts.

It is, we are told, to "utilise" some newly acquired knowledge of the principles of gold extraction that this undertaking has been decided on; and as the adventurers ask the public for nothing in the shape of capital, they hold themselves somewhat independent of "note and comment" upon their proceedings. In this they may be, as men who possessing means have a right to do what they like with their own, not far out; but example being very catching, it is our duty to suggest caution before any return to the old system of gold prospecting in this country should be hazarded. Although possessing the information, we refrain from mentioning the names of the gentlemen about to try their fortunes in the gold mines of Ireland, and for obvious reasons defer alluding to the localities chosen. As they are providing themselves with the best mechanical appliances, the adventurers seem to couple the sagest prudence to their signal courage, and deserve success.

The field they are about to enter upon is as interesting as it is extensive; and as there is no competition whatever to be encountered they will have the whole game to themselves. We hope sincerely they go in to win, the more particularly as the general mining interest of the United Kingdom would be considerably enhanced by their being triumphant. Nor do we hesitate to say that the stimulus of such success is at this moment much wanted. Anything to dissipate the existing languor is to be earnestly desired.

When the Government worked the gold mines in Ireland the results were entirely unremunerative. In two years 945 ozs., in value 3675L, were registered to its credit, and as the expenses were far in excess of profits the mines were abandoned. Other attempts were subsequently made by companies, but the speculation in every instance proved a failure, and in some instances a rather expensive one. However, it may so occur we shall be found wiser in our generation, and that the great improvements which have within a few years taken place in science will remedy those evils to which the old gold miners had to succumb.

It is one consolation that, should the attempts now about being made in the gold tracts prove futile, Ireland is rich in other minerals, to which enterprising capitalists can profitably direct their attention. The facture of peat charcoal for various purposes is also becoming a source of great industry, and we hope of prosperity, to all engaged therein. The industrial uses of this production are found to be various and valuable, and its application as fuel under a new system has, we understand, been found most effective and economical. Mining in Ireland, generally speaking, where it has been carried on in a business manner, has been remunerative. There is, of course, room for improvement, and as there is still scope for adventure, the case is not hopeless. However, let us hope for the well-being of every legitimate undertaking in mining. Steadily and perseveringly followed, it is for the most part a successful industry; and as the renewal of

gold-seeking, on which we have offered a few passing comments, is said to have the countenance, if not the adhesion, of a scion of a noble house, it will be made under protective auspices, more than ordinarily encouraging.

## MINERAL WEALTH OF IRELAND:

## APPEAL TO LANDED PROPRIETORS AND NATIVE CAPITALISTS.

We have continually advocated the prosecution of the mineral resources of Ireland, believing, as we do, they will be found to add in no small degree to the improvement of the social condition, as well as to the wealth, of that highly-favoured isle. The enormous deposits of almost every useful mineral production lying unheeded have been proved beyond all doubt to be capable of being worked to a profit. Whence the apathy displayed by Hibernia's otherwise enterprising sons is most marvellous: had the advantages which they possess been within the reach of almost any other people, long since would they have been most assiduously cultivated. No wonder the gentry complain of poverty on the part of their tenantry, when so little employment is afforded to their teeming population as agriculture of the most wretched description on the greater part of the mountain districts offers. No wonder the villages wear that miserable aspect the pitance of wages doled out must necessarily engender. No wonder the poor feel oppressed. All our English and Welsh mining districts would have been similar had they been equally neglected. The great complaint has been the cry of "want of capital;" that, no doubt, has been in a great measure one cause, but that is not the only one,—lack of encouragement on the part of landed proprietors to miners, and a want of energy amongst the Irish capitalists and merchants, have been the principal. Where Irish mining enterprise has been undertaken, it has generally been by Englishmen and English capital; and it is well known that some of these parties are reaping vast profits from their adventures. The most casual observer would have supposed that the mines of Wicklow, lying as they do within a few hours' ride of the metropolis of the island, and with the splendid examples of good fortune to English proprietors who have embarked therein, would have caused sufficient excitement for the Irish mercantile community even to have bestirred themselves to activity, and have used every endeavour to secure to themselves that which is their natural birth-right. It is useless to state that capital does not exist in the country for such purposes; that which does, if employed in mining, would soon double itself, and would not only extract from the soil its latent riches, adding, as such does, to the general wealth by the vast commerce created in the practice, but the success which has been already proved, and in all human probability must accrue, would attract additional capital from all parts of the world;—a bright page would then be opened in the history of Ireland, and a glorious future indicated.

But whilst thus endeavouring to direct attention to these vast sources of industry and wealth, we again implore the Irish gentry and merchants to look to their own true interests; not to be callous or indifferent to their welfare; not to wait till the stranger comes in, sets the example, reaps the reward, and takes the prize out of their hands. How many thousands of pounds have been realised in Ireland by strangers that, had Erin's sons evinced proper spirit, might have been retained in that country, to its immense advantage as a nation, by extending comfort, civilisation, and happiness. We beg them to remember the proverb—"God helps those who help themselves." Even amongst the ancients so alive were they to the advantage of self-confidence, and to the necessity of self-action, that one of their writers exemplified most powerfully its effects in the fable of JUPITER and the clown. We sincerely hope the gentlemen of Ireland will be up and doing; will put their shoulders to the wheel, whip up their steeds, display energy and activity, then they may rely on assistance they would not otherwise obtain.

The country is known to possess every facility,—good ports and harbours, which should be crowded with vessels carrying produce to and from the mines; water-power of immense value, good roads, a population who make most excellent miners, and who are most anxious to become such, who work cheaply and well when adequate encouragement is given. Should the mines be vigorously worked, the cabin and mud-hut sparingly sprinkled o'er the hills, or huddled together in filthy hamlets, would give way to thriving towns, with their comforts and cleanly improved habits,—content and happiness occupy the place of wretchedness and misery. Think not this is an overdrawn picture. It has been proved to be the case in many instances, and that, too, in so rapid a manner as to create surprise and admiration. Within 30 years the mining districts of Cornwall have realised all this—aye, more,—and are hourly progressing.

We are thus explicit and energetic, as we hear there is at length a probability of a Dublin company being formed, under the most favourable auspices, for the purpose of prosecuting the good cause; and we feel we should be wanting in our duty to that we have so long advocated were we now to neglect the opportunity. The company may rely on our best wishes for its success, and on our hearty co-operation, in furtherance of which we call on all Irishmen, for the sake of their country, for themselves, and for society in all parts of the United Kingdom, to come forward and support the undertaking, when most assuredly their consciences and their pockets will be alike rewarded.

## THE MINING AND INDUSTRIAL INTERESTS OF CORNWALL.

[FROM OUR CORRESPONDENT IN WEST CORNWALL.]

DEC. 9.—The prospect of the mining interest improve as the year approaches to its close. Advices from the manufacturing districts state that the trade in metallic manufactures is gradually improving. If the shipping interest were not so dull, and so many ships unemployed, there would doubtless be a greater demand for sheathing copper, which is a very important branch of consumption. Notwithstanding this unfavourable circumstance, there is a good home trade, and the price of copper, there is very little doubt, will shortly advance. The standard for ores at the present time cannot be complained of; it is very much more in favour of the miner than it was at the corresponding period of last year. At the sale last week (Dec. 2) a produce of 6 $\frac{1}{2}$  per cent. made 6L 3s. per ton. At the sale on Dec. 10, last year, a produce of 6 $\frac{1}{2}$  realised only 5L 10s. per ton, making a difference at the sale of this year of 13s. per ton in favour of the miner. Several of the copper mines have lately been looking better, and the prices of shares in tin mines have also an advancing tendency, it being tolerably evident, from the improving position of trade, that the price of tin will continue to advance.

There have been many enquiries for mine shares, and business has been transacted both in dividend and progressive mines. The improvement in East Basset seems to have had some effect in exciting a speculative spirit. Soon after I dispatched my letter last week it was announced that the lode in the 80 had further improved, and was worth 100L per fathom, upon which shares at once run up to 160L and 165L, but they have since been a little flatter. The neighbouring mine of Copper Hill is also stated to be looking better. At Wheal Basset meeting the 94th dividend was declared. The profit on the two months was 3144L, and the dividend was 6L per share, the same as at the October meeting; leaving a balance to credit of next account, 1461L. The ends of the mine are not at present producing more than about 7 tons per fathom, but there are some excellent stopes and pitches, yielding considerable quantities of copper ore, and there is a likelihood of improvement at different points, where the lodes have a promising appearance. As the workings in this mine extend over eight lodes, there are very good chances of discovery on one or the other of them. The great question, however, is—What will the mine make in depth? The report informs us that at the deepest point—the 130, where they are preparing to fix a plunger-lift—the lode is large and spotted with ore, but not sufficient to value at present. The agents, however, will soon open on the lode, and ascertain its value. Another point is Vaddon's lode, which has been a rich lode in this mine. The agents are cross-cutting towards this lode in the 120. Some good ground is also opening on the tin-producing lodes, and from this part the shareholders are likely to derive more profit. South Frances is looking well, and the shares are likely to go up. The 114 east is worth 30L per fm., and at other points the mine is looking favourable. At West Basset, the 75 west is worth about 20L per fm.; other parts of the mine are as productive as usual. At South Carn Brea, there is a good lode in the flat-rod shaft, worth from 12L to 14L per fm. An improvement is reported in West Stray Park. Wheal Grenville has a very large and promising lode in the 66 cross-cut, which has given the mine quite a new appearance. West Seton shares have lately been rather flat. At South Seton a call of 2L per share has been made. Grambler shares are about 130L; South Tolgus about 80L. Wheal Clifford is producing large quantities of ore. At the United Mines, the ends are yielding about 22 tons per fm. of good ore, and the winzes about 21 tons per fm.

Wheal Providence has lately improved, but shares have very little advanced. Wheal Margaret shares are about 63L; Wheal Margery shares from 8L to 9L.

As an instance of the great wealth that is sometimes amassed in the pursuit of mining, it is stated that the late Mr. James Harvey, of St. Day, has left property to the amount of upwards of 300,000L. Mr. Harvey was a merchant and a tin and copper smelter, as well as a fortunate shareholder in many mines.

The most important projects at the present time for the advancement of the industry of the county are the Cornwall Railway and the Falmouth Docks. It is stated that the former will be ready for opening in March next, though there are not wanting persons who disbelieve that statement, conceiving that the works are not in a sufficiently forward state to admit of the opening before Midsummer. With regard to the Falmouth Docks and Floating Harbour, 27,000L has been subscribed in Falmouth towards carrying out the scheme, and it is stated that if 40,000L or 50,000L can be obtained in the county the remaining sum required will easily be procured from London capitalists. This measure and the railway are likely to give a great impetus to the prosperity of Cornwall, especially to the western part of the county. The great increase of shipping at Falmouth which may be fairly expected will give rise to a large consumption of all articles of produce, to the special benefit of the landed interest, and the general profit of the trading part of the community, in consequence of the increased circulation of capital in the county.

## REPORT FROM NORTHUMBERLAND AND DURHAM.

[FROM OUR CORRESPONDENT.]

DEC. 9.—The Coal and Iron Trades continue in much the same position here as when we last wrote. The coal trade cannot as yet be termed brisk—that is, generally speaking, as many of the colliers are only partially employed; this is the case at some of the collieries west of Newcastle. At the large coking colliery of Marley-hill, and others in the same neighbourhood, some slackness is experienced at present. Many spare hands are to be seen in search of employment, which is certainly not pleasant, especially at this season of the year.

At the Page Bank Colliery the owners are at present engaged in sinking a new shaft. It will be recollect that a calamitous fire occurred here a short time ago, though the result, considering the circumstances, was extremely favourable in the end. The necessity for an additional shaft was pretty generally expressed at that time; when it is completed it will place the works in quite a superior position, and be an immense improvement on the former wretched arrangements.

Mr. C. Carr having retired from the viewership of the extensive collieries at Seghill and Cowpen, in consequence of the sale lately effected at those collieries, his late workmen and friends have presented him with a splendid testimonial of the value of 100L; a few of the wives of the workmen have also presented Mrs. Carr with a testimonial of their respect. It is only just to add that Mr. Carr is held in the highest respect by his workmen and all who come in contact with him. He will continue to manage the Burdon and Hartley Collieries.

Thos. Hutton, a miner, aged 40 years, was employed in the East Pit of Minton Colliery on Tuesday week in removing a "judd," when a large stone fell from the roof and killed him on the spot; and on Saturday week John Hutchinson, aged 20, employed at the screens at Thorne Colliery, went up to the pits heave to oil it, and on his return his foot slipped, and he fell a distance of 30 feet. His skull was severely fractured, and he died shortly afterwards.

The Stephenson Monument is considered of so much importance here that a book has been written on the subject by Mr. Oliver, an architect, in which he discusses the question—What is it to be? We have before made some remarks on this subject when we noticed the proposition that it should in some way be connected with the proposed Mining and Manufacturing College at Newcastle, and we observe that the question is fully discussed in the *North of England News and Advertiser* of Saturday last. We quote here part of the article in that journal, which appears to us to contain valuable suggestions:—"All who feel interested in the Stephenson Memorial—and who is not? should read the pamphlet in question. We cordially agree with its author, that the monument should be something more than a mere statue. But we have an idea that it might also be something more than a mere statue with a mere architectural covering over it. The name of George Stephenson being known for his practical genius and untiring industry in a pre-eminent degree, a monument to his memory should be characteristic, and not a mere ornament, however imposing. It is proposed to establish a Mining College in Newcastle; might not the proposed monument be connected with such an institution? We would thus give life to the monument, it would not be simply a cold witness to the genius and energy of Stephenson, but in it he would once more live and breath. His spirit would be communicated to the institution, and would again be useful. Why not erect a splendid building to be appropriated to the great purpose for which Stephenson himself came into existence, and to which he so diligently and successfully devoted himself? Might not his sculptured figure be appropriately placed in the magnificent entrance hall of such an institution, to invite and encourage the genius of the district to become labourers in that sphere of usefulness in which his name has become so distinguished? To carry out such an object would, of course, require a more liberal list of subscribers than would be necessary for an ordinary monument; but if the coalowners of Northumberland and Durham would seriously set themselves to the task they have so long contemplated, we see no difficulties which might not be easily overcome."

We cordially subscribe to those sentiments, and think the occasion a fitting one to agitate this most important subject. The funds, we doubt not, could easily be raised if the coalowners were once unanimous on the subject, and thoroughly roused from their apathy. The Duke of Northumberland's promise of 5000L would figure well in the list.

## REPORT FROM YORKSHIRE, DERBYSHIRE, AND LANCASHIRE.

[FROM OUR CORRESPONDENT IN CHESTERFIELD.]

DEC. 9.—The Iron Trade continues to indicate a renewed degree of prosperity, and the home demand is much improved. There is also a better enquiry for iron for American consumption than of late. The pig-iron trade is improving, and prices are more firm and regular. Some orders for rails for colonial lines have been received, whilst the consumption for home lines is on the increase. This has occasioned a renewed activity in this branch of the iron trade, and occasioned a greater degree of firmness and regularity in prices than have previously prevailed.

The Coal Trade in Derbyshire is much in the same state as noticed last week. There is great activity on all sides, and work is plentiful and labour very scarce; prices good, and improving. No strikes. What could be more cheering?

In the Leeds district the strike of colliers has been brought to an amicable termination. The reduction proposed was 15 per cent.; that accepted is 7 $\frac{1}{2}$  per cent., and it seems satisfactory to both parties. It was not pleasant for the miners to starve, nor was it agreeable for masters to be in continual receipt of orders which they could not supply, and breaking contracts which they were unable to meet. We hope both parties are now satisfied, and that the day will be far distant when a recurrence of the scenes lately witnessed will be seen.

Satisfactory progress continues to be made in the several progressive lead mines in the Peak of Derbyshire.

The North Derbyshire are pushing forward to complete their plant within the present year, so as to begin the new one with new prospects. Like all great undertakings, there have been several large items of expense which were not originally contemplated; and, as we have before stated, the shareholders must prepare for a further call—probably of 5s. per share, perhaps it may be more.

At the Robin Hood Mine (Matlock) half-yearly meeting, Capt. George Walker presented his first report, from which we learn that during the month of April the level shaft, which was in a very dilapidated state, had been enlarged and repaired to the extent of 16 fathoms, and from that point a distance of 19 fathoms had been driven in the pipe, or vein, and, although found favourable, it was deemed advisable to sink a new shaft, at a distance of 60 yards westward of the level, in the last 5 fathoms of which several specimens of lead ore were found. From this it was concluded that the present operations might be continued with favourable results, as they were within 5 fathoms of the bearing, where large quantities of lead ore had been raised. It was his intention to explore this ground, and he had little doubt that the expectations of the company would be fully realised. Mines immediately contiguous were yielding considerable quan-

tities of lead ore. The works were progressing at a moderate cost, and the future prospects of the mine are reported to be encouraging.

There was a sale by auction this day at Sheffield of about 100 shares in the Mill Dam Mine, which were forfeited owing to the calls not being paid up. The prices realised were from 11s. to 16s. per share. The agent is busily employed in clearing out some material at the foot of the shaft.

A few weeks since we drew attention to the proposed formation of a limited joint-stock company, for the purpose of effecting the purchase of the valuable freehold estate known as the Wellington Colliery, near Chesterfield. A contract has since been entered into for their purchase at 48,000*l.*, and the value of which has been estimated at nearly 60,000*l.*

#### THE IRON AND METAL TRADES OF STAFFORDSHIRE.

[FROM OUR CORRESPONDENT AT WOLVERHAMPTON.]

Dec. 9.—The improving tone of the Iron Trade in this locality, as in other parts of the country, appears to be more distinctly and universally felt this week. Most of the leading makers are able to keep nearly in full operation; and although the orders on hand are not large, the advices are promising, and enquires give good grounds for anticipating a larger demand and better prices shortly. Some of the needy makers who have been compelled to undersell, in order to secure cash, are now not disposed to take orders except at an advance.

The makers of pig-iron are also holding back for an advance, which they hope to realise in the ensuing quarter. As yet there is no advance on 3*l.* 12s. 6*d.* for best hot-blast mine pigs.

In the Hardware Trades there is no particular change, but the tendency is rather towards improvement, although just before Christmas is not the time for the receipt of large orders.

The examination of Mr. Riley, formerly an extensive ironmaster, who failed in Nov. last, is fixed for to-morrow, at the Birmingham Bankruptcy Court. From a balance-sheet prepared for the Court, it appears that the total liabilities on the estate of Riley and Son amount to 320,000*l.* The unsecured creditors reach the sum of 168,201*l.*, and the liabilities on endorsements are 144,403*l.*, of which 105,692*l.* is expected to come against the estate. The assets leave a deficiency of 210,041*l.* The personal expenditure since Jan. 1854, is put down at 23,692*l.* The amount of liabilities on acceptances clearly indicates the class of persons with whom the firm dealt.

There is a strike amongst the glass-makers at Stourbridge, chiefly on the ground that the masters employ a greater number of apprentices than the men think should be articed. Resolutions in favour of standing out and supporting the men on strike were passed at a meeting held a short time ago at Stourbridge.

A new station having been opened at Brierly Hill, on the Oxford, Worcester, and Wolverhampton Railway, some of the leading inhabitants of the town invited Mr. Sheriff, the manager of the line, and several of the officials, to a dinner on Tuesday. The proceedings were of a very harmonious character. Mr. Sheriff stated that whilst the original estimated cost of the line was 1,500,000*l.*, the actual cost was 4,250,000*l.* He stated that the company was now emerging from the nearly bankrupt state in which they had only recently been placed, owing to the heavy expenditure in the formation of the line.

At the meeting of the Birmingham Board of Guardians, on Thursday, the Visiting and General Purposes Committee made a return relative to the working of the brewey fixed at the workhouse some time since, on the recommendation of Mr. Pedley. From April 11 to Nov. 12 the slack used, and all incidental expenses, amounted to 30*l.*, and, after deducting the income from brewey sold, the cost of raising steam at the workhouse was only 48*l.* 11*s.* Mr. Mill did not doubt that the ovens had effected a considerable saving, but thought the experiment should have six months' further trial. Mr. Pedley said that ten months ago he stated to the board that it was possible for them to save the whole cost of producing the steam required at the workhouse, though then it was costing the parish 35*l.* a year. He appealed to the board whether the brewey now had not fulfilled all he promised, both in respect of its economy and of its smoke-consuming qualities. Mr. Heaton, like other members of the board, was at first very dubious as to the wonders this brewey was to accomplish, but now, according to his calculation, he found that the coal used has cost 29*l.* 11*s.*, and the brewey produced had sold for 20*l.* Allowing 5*l.* for the coal used under the boilers when brewey were not being made, the cost of providing the steam for the workhouse during 35 weeks was only 38*l.*, so that comparing this with the expense before the ovens were erected, there was a clear saving of 5*l.* per week.

#### LEGITIMATE MINING AS AN INVESTMENT.

BY JOHN ROBERT FIRE.

The Cost-book System, as we have elsewhere intimated, has not yet received that fair share of attention to which we consider it justly entitled, in connection with the progress and well-being of Cornish mining. Long and familiarly known to the mining community in its most ordinary application, the expansive character of its broad and equitable base seems to have been greatly overlooked in the search for legal systems adapted to the growing exigencies of modern business.

Time was when the county of Cornwall contained within its bounds not only the mines, miners, and engineering talent, without which money would have been a useless drug, but the capital, which infused life into the whole machine, giving wealth to the speculator and abundance to the worker. The scene gradually changed, and the mineral wealth of that remote corner of our land was swayed in a large measure by influences, and participated in by individuals, ex-territorial. Underunning the calendar of time by one decade, we see the vast mineral interests of Cornwall, represented by share property, dispensed in London to the public by the hands of two or three business firms, which have gradually increased in number until now they aspire to the dignity of a corporation. Partly as a cause, and partly as a consequence of this increase in the number of business men, whose time is entirely devoted to the negotiation of mine share property, a steadily increasing amount of money has been flowing into the county of Cornwall from individuals residing without its limits. The number of mines at work has proportionately increased. The old Cornish system of dividing mines into small numbers of shares (say 256) is being gradually displaced by the more modern method of a greater number (say 5000), in deference to the increasing number of investors. As companies have numerically increased, different modes of management have been scrutinised, comparisons have been instituted between the legal constitution of mining and other joint-stock enterprises, and shareholders, in their eagerness to secure for themselves a liability absolutely limited, by placing their affairs within the statutory provisions of a recent Act of Parliament, have, perhaps unwisely, not fairly considered the powers in this direction which they were capable of exercising under the old Cost-book System of management.

That a mining company carrying on its operations within the jurisdiction of the Stannaries Court can be so constituted as to secure limited liability to the shareholders, we believe there can be no manner of doubt; the *modus operandi* must be necessarily left to the legal profession, the only aspect of the subject with which we can consistently deal being that purely commercial. In previous communications we have stated our views as to the necessity now existing for the introduction of limited liability and a paid-up capital in mining for copper, lead, and tin; pointing, at the same time, to the recent Joint-Stock Companies Act as presenting the requisite legal facilities. With its scope and purport the mining public are tolerably well acquainted, and it is, moreover, just now popular. But whilst simply stating the fact that the Limited Liability Act and the Cost-book System are capable of effecting the same object in different ways, we cannot hesitate to express our conviction of the great superiority of the latter system over the former in the prosecution of mining adventures. Under the cost-book we have to deal more with a system of equity than of law; its whole genius being eminently suited to the distinctive peculiarities of mining. It is surrounded by fewer and less intricate forms, is consequently less expensive in its administration, and in matters of litigation secures to suitors more substantial justice, by appealing to a court constituted solely for the adjustment of mining differences. In a word, we commend the Cost-book System to the honest consideration of every one desirous of improving the present constitution of mining companies, as containing within itself all the elements of security and usefulness.

**PREVENTION OF COLLIERY EXPLOSIONS.**—In another column we publish a description of a safety-lamp, just patented by Messrs. Wilkins and Co., of Long-acre. We have carefully examined the lamp, and find that it is a modification of the Mæseler lamp, there being a trifling difference in the manner in which the air is admitted to the flame. It is well known that in the Mæseler, the lamp in general use in Belgium, the tube through the oil-vessel by which the air is supplied is protected at the bottom by a wire gauze, the bottom of the oil-vessel being sufficiently raised and orifices provided, so that when the lamp is stood on a flat surface the air passes through the orifices and up the tube. When the lamp is suspended the air passes direct through the gauze to the flame. Messrs. Wilkins provide a much larger quantity of air, by employing four large tubes instead of

one small one, and forming the air-chamber so that the protecting gauze is placed over the outer orifices instead of at the bottom of the tube. They employ the ordinary cotton, as in the Davy, and there is no pricker. When a greater amount of light is required they use a dioptric lens, which may be familiarly described as a cylindrical "bull's-eye," the good effect of which may be easily imagined.

#### GOVERNMENT SCHOOL OF MINES.

Dr. PERCY delivered a lecture on "Iron." In his previous discourse on this subject he had told them of the various processes which were practised with this useful metal. He should come to the effects of the hot-blast, and on this head some very important papers had been published by Dr. Clarke. In 1829, with the cold-blast, it took 8 tons 1 cwt. 1 qr. of coals to make 1 ton of iron. In 1830 it took 5 tons 3 cwt., and on this occasion the furnace was only heated up to the temperature of 300 deg. Fahr., while in 1833, when raised to 600 deg., the consumption of fuel to make 1 ton of iron was only 2 tons 5 cwt., 1 qr. In some furnaces the hot and cold-blast were used together. An example of this he had seen at the works of the British Iron Company, near Birmingham. Some of these cold-blast furnaces turned out a considerable quantity of iron, and at Bowes they had produced as much as 237 tons (or 21 cwt.) in a week. In some furnaces they had used caustic lime in lieu of limestone. This was derived from its carbonic acid. He was not aware whether this had been extensively employed, or, if so, whether it would have led to greater economy by its application.

He would give them an analysis of a Northamptonshire iron ore, which was before them. This contained—graphite, 1*4*/<sub>4</sub>; carbon combined, 9*1*/<sub>2</sub>; silicon, 2*1*/<sub>2</sub>; phosphorus, 0*1*/<sub>2</sub>; manganese, 1*0*/<sub>2</sub>; iron, 92*7*/<sub>2</sub>. In some iron ore sulphur, as much as 7*0*/<sub>2</sub> per cent., of phosphorus, and in others 3*6*/<sub>2</sub> and 3*4*/<sub>2</sub>. The specific gravity of this ore was 7*0*/<sub>2</sub>. The "spiegel eisen," or white iron, contained no mechanical carbon, which was graphite, but was thus constituted:—Carbon combined, 5*1*/<sub>2</sub>; the proportion of sulphur was very small, being only 0*0*/<sub>2</sub>; phosphorus, 0*1*/<sub>2</sub>; iron, 89*7*/<sub>2</sub>. He should further speak of white iron when he came to the subject of refined iron. The temperature of the cold-blast is able to reduce phosphoric acid.

He would now pass on to a subject which was of great importance—the conversion of pig into bar-iron. The difference of this is the carbon, and the separation of this is done on the principle of oxidation.

The process of puddling—one of the greatest discoveries ever made—is due to the late Mr. Cort, who introduced it in the year 1784. Previous to this the iron was brought out in a sort of bloom, and melted with charcoal. Attempts have been made to deprive Mr. Cort of the merits of this invention. It is true that a patent of somewhat similar nature was taken out a little previously, but in this there is a blast, which there is not in Mr. Cort's furnace. The process of puddling was then described as practised in Staffordshire. The iron used was what is called strong forge pig. The furnace was cleared of the tap-cinder. A charge of 4 cwt. of iron is introduced, and 1*2*/<sub>2</sub> of hammarfined slag: this is melted in half an hour.

When the thick coal of the ten-yard measure is used, when new mine coal is employed a longer time is required. The hammarfined slag is spread over the bottom and towards the sides of the furnace. After it is melted the boiling iron throws up a great effervescence, and swells up to a great extent, even as high as the door of the furnace. When near the melting point the pig easily breaks, and it is changed into a pasty metallic mass; it is then separated into 5 balls, each of these weighing 80 lbs. They are then masses of wrought-iron, which afterwards are subjected to pressure, in order to form a coherent mass. When rectangular they are placed under the rolls, and called puddled bar-irons. The time the operation takes is from 1*1*/<sub>2</sub> to 2*1*/<sub>2</sub> hours. The tap cinder is run off into boxes. A section of the furnace was then shown: the measurements of this they could take at their leisure, if they felt so inclined. The fire-place they would observe was very large in comparison with the bed. The bottom of the furnace is of iron plate, protected with bull-dog, or calcined tap cinder, the properties of which had previously attuned to it. The furnace is constructed of refractory materials, generally of the best Stourbridge bricks, protected by plates and transverse bars. The fire-place was 3 feet 9 inches square. The furnace should be provided with a damper, in order to regulate the temperature. When the iron comes to nature the iron is kept full of smoke. It takes about 22 cwt. of pig to make 20 cwt. of puddled iron: sometimes 21*1*/<sub>2</sub> cwt. of pig will give the same weight. A good puddler can 3*l.* per week, besides paying his assistant, who is generally a boy. When the iron comes to nature the carbonic oxide is evolved, and the action of the gas comes from below. When the furnace is worked cold the iron is called red-short. To produce a good iron the furnace must be worked to a high temperature, and occasionally something like pig-iron must be expected to be met with. Previous to the introduction of puddling refining was always used. According to calculations furnished him by Mr. Samuel Blackwell, it took 1*1* cwt. 3*qrs.* to 1*ton* 1*cwt.* 1*qr.* of pig-iron to make 1*ton* of puddled. The ordinary calculation at Dudley was from 24 of pig to 22 of puddled. An analysis of the slag obtained in puddling gave—silica, 15*2*/<sub>2</sub>; protoxide of iron, 60*1*/<sub>2</sub>; peroxide of iron, 16*1*/<sub>2</sub>; oxide of manganese, 2*2*/<sub>2</sub>; lime, 0*6*/<sub>2</sub>; magnesia, 0*4*/<sub>2</sub>; phosphoric acid, 4*5*/<sub>2</sub>. He had seen in one instance this as high as 6 per cent. The tap cinder contained 58 per cent. of iron: this was formerly thrown away. The puddled iron was subjected to an interior process. In another furnace the slag gave—silicon, 33*7*/<sub>2</sub>; peroxide of iron, 60*8*/<sub>2</sub>; protoxide of iron, 0*7*/<sub>2</sub>; oxide of manganese, 0*7*/<sub>2</sub>; lime, 2*9*/<sub>2</sub>; magnesia, 0*1*/<sub>2</sub>; phosphoric acid, 0*1*/<sub>2</sub>;—they would observe that the last item was exceedingly reduced: alumina, 0*5*/<sub>2</sub>. The slags are sometimes beautifully crystallised. Here was an analysis of slag which had been exposed to calcination—silicon, 23*8*/<sub>2</sub>; protoxide of iron, 39*3*/<sub>2</sub>; sesquioxide, 29*7*/<sub>2</sub>; paroxide of manganese, 6*17*: this was evidently oxidised in a greater degree than the other; alumina, 0*9*/<sub>2</sub>; lime, 0*6*/<sub>2</sub>; magnesia, 0*2*/<sub>2</sub>; phosphorus, 6*12*. He would now speak of the yield of puddled bar-iron to that of merchantable iron, and that he had obtained from Mr. Blackwell: 1*ton* 19*cwt.* made 1*ton* of merchant bar. The process of refining was conducted on a shallow hearth, with the addition of a blast; and the crystals of white iron had in general a beautiful appearance. An analysis had given—iron, 95*11*/<sub>2</sub>; carbon, 3*0*/<sub>2</sub>; protoxide of iron, 0*7*/<sub>2</sub>; oxide of manganese, 0*7*/<sub>2</sub>; lime, 2*9*/<sub>2</sub>; magnesia, 0*1*/<sub>2</sub>; phosphoric acid, 0*1*/<sub>2</sub>;—they would observe that the last item was exceedingly reduced: alumina, 0*5*/<sub>2</sub>. The slags are sometimes beautifully crystallised. Here was an analysis of slag which had been exposed to calcination—silicon, 33*7*/<sub>2</sub>; peroxide of iron, 60*1*/<sub>2</sub>; protoxide of iron, 0*7*/<sub>2</sub>; oxide of manganese, 0*7*/<sub>2</sub>; lime, 2*9*/<sub>2</sub>; magnesia, 0*1*/<sub>2</sub>; phosphoric acid, 0*1*/<sub>2</sub>;—they would observe that the last item was exceedingly reduced: alumina, 0*5*/<sub>2</sub>. 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## MANUFACTURE OF COPPER.—No. II.

The first patent for "improvements in the art of smelting copper ore" granted in the present century was to Mr. John Lewis, of Llanelli, but what the process which he desired to secure by this patent was we have no means of knowing, as no specification was enrolled. It is probable, however, it was not dissimilar from the invention in respect of which a patent was completed during the following year. On July 23, 1813, six months after the grant of the last patent, we find another secured to Mr. John Lewis, late of Llanelli, but now of Penclawdd. This invention consists in building the ore and metal furnaces between two calciners, and lifting the same above the said furnaces. He causes the ore and metal when calcined to be conveyed red-hot through iron pipes direct to the furnace. He lengthens the run of the metal from the furnace to the metal pits. He annexes a diagram to his specification, showing the ground plan and section of the said calciners and furnaces; but the description above given affords a good idea of the nature of the improvement. By the aid of his invention, he says, the same work may be done in less time, and with fewer furnaces; that there is no waste of ore or metal from removal; that there is no explosion from the metal pit to injure the building; and that there is a considerable saving of fuel, labour, and materials.

In September, 1814, Mr. W. E. Sheffield, of the Polygon, Somers-town, patented an invention, which consists in subjecting copper (chiefly when in a closed vessel, or furnace, with charcoal, charred coal, or animal coal, wood charcoal being preferred). With regard to the preparation of the copper to be treated, and to the management and application of heat, he employed the then well-known processes. The heat employed was somewhat higher than that necessary for annealing copper; and sometimes he carries the heat as high as that of fusion. The second part of the invention relates to working the copper, or its compounds, into wire, when such metal is capable of being wire-drawn. A patent for "improvements in smelting the ores of various metals" was granted to Mr. R. Smith, of Tibbington House, Stafford, but no specification was enrolled; and, from the address of the inventor, it is probable that the invention referred rather to iron than to copper. An invention, which consists in connecting a furnace, in which the ore or metal is calcined, to a furnace in which the same is melted down, making use of one grate or fire-place only to effectually heat and do the work of two furnaces, was patented by Messrs. Wm. and Martin Bevan, of Morriston. Their improvement is effected by first passing the heat from the grate into the furnace requiring the melting, or strongest heat, and after it has performed its work in this furnace they convey it into the calcining furnace. They likewise build two other similar furnaces, and employ one stack for the four furnaces.

A period of seven years elapses before we meet with any other copper smelting patent, and we here find, on Dec. 22, 1822, a patent granted to Mr. W. Pass, of Curtain-road, Shoreditch. The inventor claims the application of a hopper for supplying coal or fuel to a furnace for smelting ores, but disclaims the use of such hopper for other purposes. On May 16, 1825, Mr. John Badams, of Ashton, near Birmingham, patented a "new method of extracting certain metals from their ores, and purifying certain metals." No specification was enrolled, but upon the same grounds as we supposed Mr. R. Smith's patent to relate chiefly to iron, we should give a similar opinion in this instance. The next patent is that of Mr. Jos. Jones, of Amlwch, granted July 17, 1828. This invention relates to the use of a reverberatory furnace, in which the regulus is molten with copper ore. After the charge has been melted, and well stirred, it is left in the furnace for a quarter of an hour, and when run out is found to be of a better quality than usual.

## EUROPE AND AMERICA—INTERCOMMUNICATION.

The necessity and importance of increased facilities being afforded for rapid communication between Great Britain and her colonies is generally acknowledged, and at the present moment Canada is the object of much attention, not only from the vast progress which has within the last few years been made in that part of our possessions, but also from its being so valuable an aid to the carrying on of the commercial and social intercourse so rapidly increasing between Great Britain and the United States. Sailing vessels, for short voyages at least, may now be considered as things of the past, and, as concerns our trade with the United States, the chief question for consideration is how to establish and maintain a regular system of rapid communication between the most westerly point of the United Kingdom and the most easterly point of our possessions in British North America—the chief object being to enable us quickly to learn the requirements of the American markets, and at the same time give the Canadians every possible opportunity of participating in our gains.

Under the title of "The Social, Political, and Commercial Advantage of Direct Steam Communication and Rapid Postal Intercourse between Europe and America, via Galway," Mr. Pliny Miles has issued through Messrs. Trübner and Co., of Paternoster-row, a collection of interesting facts, which prove, in the most indisputable manner, not only the importance of encouraging steam communication between Great Britain and the colonies, but also the deplorable effects of its disengagement. While England, by her unceasing perseverance in securing liberty to her people, and in facilitating by liberal enactments the development of her commerce, has been making satisfactory progress, our continental neighbour, France, appears, under the guidance of an unscrupulous despot, to be gradually declining in commercial prosperity, and will doubtless continue to do so until she has the advantage of being governed in a more constitutional manner, and by more conscientious men, and has the power to become possessed of institutions sufficiently free to lead to the introduction of a more liberal policy in the administration of her affairs. The French coasting trade has decreased since 1847 to the extent of 194,592 tons. The tonnage of sailing vessels has decreased since 1847 to the extent of 237,709 tons. The only port in France that has an extensive steam commerce, and that commerce almost entirely in foreign vessels, whilst in Great Britain, of the vessels exclusively in the coasting trade the tonnage of sailing vessels decreased during the last four years for which returns have been issued from 694,712 to 767,925, and steamers from 54,092 to 92,481 tons. A return just published in France, although showing an aggregate increase of revenue in the first nine months of the present year as compared with the corresponding periods of 1856 and 1857, there was a considerable decrease in several sources of revenue, which have a very direct bearing on the prosperity of commerce. And it must not be forgotten that whatever has a prejudicial influence upon general commerce prevents the successful development of the mineral resources of a country, and this will account for the fact that whilst in England moderately productive mines return enormous profits, in France it is extremely difficult to obtain only a fair remuneration from mines known to be marvellously rich, and situated in what would appear to be the most desirable localities.

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IMPROVED STEAM-BOILERS.—Mr. John Clare, jun., of Liverpool, has just patented an improvement in the construction of boilers for marine, locomotive, and stationary use. If weight, space, and increased strength of structure be a desideratum, Mr. Clare's invention is undoubtedly meritorious, as he positively asserts that he can construct a boiler upon his principle that will stand upwards of 1000 lbs. pressure to the square inch. We learn that locomotive engineers of great repute have reported favourably upon Mr. Clare's discovery, and that he has taken orders from one of the largest cotton-spinners in Lancashire for ten boilers of large dimensions that will stand 500 lbs. to the inch pressure, and the manufacture of them has been entrusted to one of the first boiler makers in Manchester. It is anticipated that the invention will meet with general approbation.

BISULPHATE OF CARBON AS A MOTIVE POWER.—Heretofore when using bisulphide of carbon as a motive power, the vapour thereof has been combined with steam, and the two have been caused to work ordinary engines, and the bisulphide of carbon has then been separated from the water after condensation. Mr. J. York, of Paris, proposes to employ the vapour of bisulphide of carbon without mixing it with steam, and to condense the vapour, again and again using the bisulphide of carbon. The arrangement of the boiler and machinery may be greatly varied, but he prefers that the generator of vapour should be within an ordinary steam-boiler, and consist of a vessel having though it a number of tubes within which the steam passes. The bisulphide of carbon is pumped or forced into the vessel or generator in a quantity sufficient to produce a stroke of the engine connected therewith, and the vapour, after passing from the engine is condensed by a surface condenser, as heretofore used, which is worked by an air-pump, and the condensed bisulphide of carbon is again and again used, by being forced into the generator or heated vessel.

DYING AGENTS.—A patent recently taken by Mr. Henry, patent agent, Fleet-street (for Yasseur and Houbigant), specifies, dyeing and preparing agents, concentrated baths of plants or vegetable matters containing tannin, resins, bodies, and bitter or styptic principles, treated with acids or chlorine. Pulp for paper and pasteboard, and ingredients for the manufacture of blacking, are obtained from the resins. Tanned skins and hides are obtained quite colourless, by combining acids or chlorine with the tanning agents.

GLYCERINE.—We learn from a patent recently taken in this country, by Mr. Henry (on behalf of Yasseur and Houbigant), that among the useful purposes to which glycerine can be rendered available it may be advantageously applied to mortar, cement, paste, and similar matters intended for daily use, in order to keep them in a suitably damp state.

IMBS'S SEWING MACHINE AND FABRIC.—A patent has been lately taken by Mr. Henry (on behalf of Mr. Imbs), for a fabric composed of layers of silvers, stitched together by threads, interlacing like warp and weft, and afterwards fulled. The machine preferred for the stitching delivers the fabric through independent guides as the work proceeds, the warp needles being connected together into a comb or reed, moving suitably to traverse the fabric, and forming loops, into which the weft needle inserts its thread.

against the present rate of stamp duties, as altogether beyond what is necessary for the purpose; and this meeting hereby authorizes the Council of the National Patent Law Amendment Association to apply to the Government for the reduction of these stamp duties, and for other reforms in the Patent Law."—Mr. FULLER, in moving this resolution, showed that the receipts of the Government Patent Office were so large that there was a considerable surplus; and this clearly evidenced that more taxes, or stamp duties, were levied than the maintenance of the Patent Office required.—Mr. CAMPIN, in seconding the resolution, observed that, as he considered inventors as much, and perhaps, in strict justice, even, more entitled to property rights than the possessor of land or money, it was unjust, as well as impolitic, to saddle them with heavy and unnecessary taxes; and although it might be said that the object of the present payments was to induce parties to surrender useless and frivolous patents, still such high amounts as 25%, 50%, and 100%, were a great deal more than was necessary.—Mr. BROOKES, in supporting the resolution, advocated a system of taxing the sale of patent articles. The resolution was then put and carried; and after a vote of thanks to the Chairman, the meeting separated.

SURREY GARDENS COMPANY.—The property so long known as one of the most favourite places of amusement on the Surrey side of the Thames—the Royal Surrey Gardens—is about to pass into the hands of a new company, for a sum of 15,000. The capabilities of the property are universally admitted, and although the undertaking has not hitherto answered the expectations of an experimental company, it is the confident belief of the directors that at the present low price, by avoiding, as far as possible the assumption of professional management by a company, a return upon the capital expended may be fairly expected. The estimate of receipts and expenditure is set forth in the clearest manner, and from it there appears no doubt that a net profit of 4,000 per annum might easily be realised by simply letting the several portions of the property, and almost without risk.

STEAM TELEGRAPH COMPANY.—Under this title a company, with a capital of 100,000*l.*, in shares of 10*l.* each, is in progress of formation. The object of the company is to work a patent granted to Mr. Isham Baggs for improvements in apparatus for lighting, signalling, and telegraphing by means of electricity. It is stated that the most important of the inventions consists in the application of steam-power to electric telegraphy, by which means not only short messages but lengthened reports may be conveyed with increased precision and rapidity to any distance along a single line of wire. A despatch composed of 2000 words may be sent in the same space of time as is now occupied in the transmission of messages of not more than 20 words.

RAILWAY TRAFFIC.—The Traffic Returns of Railways in the United Kingdom for the week ending Dec. 4 amounted to 422,050*t.*, and for the corresponding week of 1857 to 398,260*t.*, showing an increase of 23,709*t.* The gross receipts of the eight railways having their termini in the metropolis amounted for the week ending as above to 169,286*t.*, and for the corresponding week of 1857 to 162,459*t.*, showing an increase of 8,271*t.* The increase on the Eastern Counties amounted to 12,961*t.*; on the Great Northern to 11,751*t.*; on the Great Western to 4,491*t.*; on the London and North-Western to 12,961*t.*; on the London, Brighton, and South Coast to 2471*t.*; on the London and South-Western to 1967*t.*; and on the South-Eastern to 2737*t.* together, 69,071*t.* But from this must be deducted 80*t.* the decrease on the London and Blackwall; but leaving this increase as above, 8,271*t.*

The receipts on the other lines in the United Kingdom amounted to 255,764*t.*, and for the corresponding week of last year to 255,801*t.*, showing an increase of 16,963*t.* In the total increase of those lines, which, added to the increase on the metropolitan lines, leaves the total increase 23,709*t.*, as compared with the corresponding week of 1857.

## WEEKLY LIST OF NEW PATENTS.

GRANTS OF PROVISIONAL PROTECTION FOR SIX MONTHS.—J. G. MARTIN, Amphilith-square, London: Improvements in the manufacture of iron, and in the apparatus employed in such manufacture.—W. HANCOCK, Upper Chadwell-street, Middlesex: Manufacture of telegraph wires and cables.—E. A. PONTIFEX, Shoe-lane, London: External surface condensers.—W. CLARKE, Chancery-lane, London: Purifying natural phosphates of lime. (A communication from E. C. Martin, Paris.)—J. E. F. LUEDKE, Marke, Hanover, and Chipping Norton, Oxford: Motive power engines.—D. ROWAN, S. ROBERTSON, Greenock: Improvement in steam-engines.—C. TOMLINSON, Worcester-st., Wolverhampton: Stop taps or valves.—H. GARDNER, New York, U.S.: Compound axle hub and wheel for railroad cars.—R. NELSON, New York, and Ramsey, Isle of Man: Apparatus for raising and lifting water and other liquids.—S. W. JOHNSON, J. VADLEY, Peterborough: Pressure and vacuum gauges.—W. H. DAWES, West Bromwich: Improvement in forge hammers, and in the anvils used with forge hammers and squeezers.—W. GORMAN, Glasgow, North Britain: Improvements in furnaces, and in the construction of fuel, and in apparatus connected therewith.—A. V. NEWTON, Chancery-lane, London: Retorts for generating illuminating gas.—E. H. HESSE, Islington: A new manufacture of articles, parts of articles, parts of machinery, surfaces and ornamental works from talc and other silicates of magnesia.—J. S. NIBBS, Aston: Lighting, heating, and ventilating.—J. H. JOHNSON, Lincoln's Inn-fields, London, and Buchanan-street, Glasgow: Employment of electricity as a motive power.—F. C. CALVERT, C. LOWE, Manchester: Improvement in the manufacture of slate.—H. EASTWOOD, Elland, near Halifax: Purifying gas for illuminating purposes.—R. BODMER, Thavies Inn, Holborn, London: Vases for regulating the supply of steam.—C. MATHER, Salford: An improved steam trap or apparatus for allowing the escape of water and air from pipes, vessels, or chambers heated by steam.—E. DIXON, J. FISHER, Wolverhampton: Improvement in the manufacture of welded iron tubes.—P. GRIFFITHS, J. BRENNAN, Barley: Lubricators for introducing lubricating matter into steam cylinders, and other chambers or parts under pressure.—J. TANGYE, Birmingham: Hydraulic presses.—C. BURRILL, Tiptford: Traction engines and carriages.—H. GERNER, Garway-road, Bayswater: Improvements in the mode of, and apparatus for, manufacturing gas for illumination and heating.—W. E. NEWTON, Peterborough: Pressure and vacuum gauges.—J. H. JOHNSON, Lincoln's Inn-fields, and Buchanan-street, Glasgow: Locomotive engines.—D. EVANS, Stratford, G. JONES, Kemington-lane: Pumps and water gauges.—J. LUIS, Welbeck-street, Cavendish-square, London: A new railroad, with continuous supports splintered together without any wood being used. (A communication from L. Barroux.)—J. THOMAS, T. M. HALL, Preston: Preventing the fusion of the fire-bars in locomotive or other furnaces.—G. BOCCAS, Totnes: Construction of furnaces.—J. LOACH, JOHN COX, Birmingham: Certain improvements in ornamenting the surfaces of japanned goods, and which said improvements are also applicable to the ornamenting of certain other surfaces.—T. P. PURSHOUSE, Battersea: Pressure-gauge for steam, gas, or other fluids.—H. BESSEMER, Queen-street-place, New Cannon-street, London: Railway and other wheels and wheel tyres.—L. BISSEL, New York, U.S.: Trucks for locomotive engines.—E. L. BENZON, Sheffield: Manufacture of useful alloys of aluminium.

STEEL-TEMPERING FURNACE.—Mr. J. Thomas, New York, has patented an improved furnace for tempering steel springs. It passes the steel wire or strip of sheet steel which is intended to be tempered through an opening in a plate of fire-clay or cast-iron, which is exposed to a well-regulated fire on both sides in an upright furnace. This furnace is placed over a small tank containing water or oil, or any other hardening liquid, this tank being placed in such relation to an additional fire that heats up plates of cast-iron, that the steel spring may be passed from the tank between, and quenched in the water of the tank.

MANUFACTURE OF NITRATE OF POTASS.—According to an invention just patented by Mr. John Fraser, of Galloway, Glasgow, he proceeds as follows:—Take one ton of muriate of potash, of not less than 90 per cent., and of ordinary commercial nitric acid 22½ cwt. Dissolve the muriate of potash in as much water as may be necessary therefor, and allow it to subside. Place this liquor in suitable vessels (earthenware will do) and add the nitric acid. Now apply heat and collect the muriatic acid gas, condensing the same into acid in the usual way. Place the residue in vessels to crystallise, and these crystals are found to be nearly pure nitrate of potash, indeed, commercially speaking, they may be called pure. He also produces a nitrate of potash as pure as his own from the ordinary nitrate of potash produced in the East Indies, or elsewhere, by dissolving it in water, and adding nitric acid, according to the refraction, boiling and crystallising in the usual way—say, for instance, at 3½ per cent. refraction about 3½ lbs. of nitric acid to the hundredweight.

MACHINERY FOR FORGING IRON.—An invention, the object of which is to supersede the use of sledge-hammers in heavy forgings, has been provisionally specified by Mr. T. Dobson, of Birmingham. The apparatus consists of two upright frames, between which the hammer head vibrates, being fixed on a centre or shaft in the rear of the frames. Two horizontal slots are formed in the frames, to allow of slide blocks working in them, for the purpose of carrying the ends of transverse shaft, on which is fixed a pulley, fly-wheel, and double cam for raising the hammer. This shaft is moved backwards or forwards in a horizontal direction by means of a screw or lever, and quadrants fixed to the back plate of the machine, and connected to the slide blocks by suitable links, in order to bring the cam shaft nearer or further from the fulcrum, so as to regulate the fall of the hammer, and consequently, the force of the blow. A screw arrangement similar to the above is likewise used to ensure the hammer halting on the part of the anvil intended.

IMPROVED STEAM-BOILERS.—Mr. John Clare, jun., of Liverpool, has just patented an improvement in the construction of boilers for marine, locomotive, and stationary use. If weight, space, and increased strength of structure be a desideratum, Mr. Clare's invention is undoubtedly meritorious, as he positively asserts that he can construct a boiler upon his principle that will stand upwards of 1000 lbs. pressure to the square inch. We learn that locomotive engineers of great repute have reported favourably upon Mr. Clare's discovery, and that he has taken orders from one of the largest cotton-spinners in Lancashire for ten boilers of large dimensions that will stand 500 lbs. to the inch pressure, and the manufacture of them has been entrusted to one of the first boiler makers in Manchester. It is anticipated that the invention will meet with general approbation.

BISULPHATE OF CARBON AS A MOTIVE POWER.—Heretofore when using bisulphide of carbon as a motive power, the vapour thereof has been combined with steam, and the two have been caused to work ordinary engines, and the bisulphide of carbon has then been separated from the water after condensation. Mr. J. York, of Paris, proposes to employ the vapour of bisulphide of carbon without mixing it with steam, and to condense the vapour, again and again using the bisulphide of carbon. The arrangement of the boiler and machinery may be greatly varied, but he prefers that the generator of vapour should be within an ordinary steam-boiler, and consist of a vessel having though it a number of tubes within which the steam passes. The bisulphide of carbon is pumped or forced into the vessel or generator in a quantity sufficient to produce a stroke of the engine connected therewith, and the vapour, after passing from the engine is condensed by a surface condenser, as heretofore used, which is worked by an air-pump, and the condensed bisulphide of carbon is again and again used, by being forced into the generator or heated vessel.

DYING AGENTS.—A patent recently taken by Mr. Henry, patent agent, Fleet-street (for Yasseur and Houbigant), specifies, dyeing and preparing agents, concentrated baths of plants or vegetable matters containing tannin, resins, bodies, and bitter or styptic principles, treated with acids or chlorine. Pulp for paper and pasteboard, and ingredients for the manufacture of blacking, are obtained from the resins. Tanned skins and hides are obtained quite colourless, by combining acids or chlorine with the tanning agents.

GLYCERINE.—We learn from a patent recently taken in this country, by Mr. Henry (on behalf of Yasseur and Houbigant), that among the useful purposes to which glycerine can be rendered available it may be advantageously applied to mortar, cement, paste, and similar matters intended for daily use, in order to keep them in a suitably damp state.

THE FRENCH IRON TRADE.—Accounts from St. Dizier announce an improvement in the price of iron. Several furnaces which had been blown out are again at work. It appears from official returns that 957,955 kilos. of wrought-iron, and 700,800 kilos. of cast-iron, suitable for building purposes, entered the gates of Paris during September. These figures show a diminution of 29,161 kilos. in the wrought-iron, and an increase of 13,701 kilos. in the cast-iron, imported into Paris during September, as compared with the corresponding month of 1857.

RUSSIAN METAL TRADE.—Of late the exports of iron have sensibly diminished. In 1849-50 the exports were 742,349 poods, of which England took 25 per cent. The diminution is attributable to the distance of the principal Russian mines, which has contributed to keep up the price of iron in that country, while that of foreign iron has greatly decreased. The exports of copper show great fluctuations, but rose (1849-50) to 214,512 poods, of which England took 26 per cent. The annexed table shows the imports of metals into Russia:—

Years.	Poods.
1847-51	350,312
1851-55	31,740
1855-59	41,700

England figures first among the countries from which these imports are derived, and she also furnishes almost the whole of the importation of pit-coal, which has greatly increased, and averaged in value (1851-53) 1,250,000 silver roubles. The hour of freedom for the mining operatives of Russia is now no longer "looming in the future," for their emancipation from an ignoble servitude is to take place within six months. The Emperor has appointed three commissions, under the direction of the Minister of Finance, to carry this progressive order into effect—one commission for the Government of Moscow, one for the circumscription of Orenburg, and one for the Oural. These miners,—in fact all engaged in mining operations, must be borne in mind to form an adequate idea of the importance of this step—were once free. Anxious to give an impetus to the metallurgical industry of the Empire, Peter the Great, to all who would devote themselves to that branch of industry, conceded villages and forests. The nobles, in course of time, encroached upon these rights, till at length the peasants became serfs. But freedom has now arrived for their descendants.

## Contract for Coals—Consulate General of France.

NOTICE IS HEREBY GIVEN, that SEALED TENDERS for a CONTRACT for the SUPPLY of TWO MILLION FIVE HUNDRED THOUSAND KILOGRAMMES of

## THE GREAT SHIP COMPANY (LIMITED).

FOR PURCHASING AND EQUIPPING THE "GREAT EASTERN."

Liability strictly limited to the amount of subscription.

Capital £350,000, in 350,000 shares of £1 each.

Deposit, 2s. 6d. per share on application for ten shares and upwards. Less than ten shares must be fully paid up on application.

Detailed prospectuses, full particulars, and forms of applications for shares, may be obtained at the offices of the company, as under.

JOHN HENRY YATES, Secretary.

Temporary offices, 79, Lombard-street, London, E.C., November, 1858.

## THE GREAT SHIP COMPANY (LIMITED).

The DIRECTORS of this company have MADE ARRANGEMENTS to GRANT FREE ADMISSION until Saturday, the 18th inst. (Sunday excepted), prior to closing the ship on commencing the necessary works for equipping her for sea. Admission by free tickets, which may be obtained at the stations of the South-Eastern, the Greenwich, the Blackwall, and the North London Railways; on board the Greenwich and Woolwich boats; and at the offices of the Great Ship Company.

79, Lombard-street, London, E.C.

JOHN HENRY YATES, Sec.

## PATENT DERRICK COMPANY (LIMITED).

OFFICES.—27, CORNHILL, LONDON.

Capital £100,000, in 2000 shares of £50 each.

This company's derricks, which may be employed either as stationary or moveable weight-lifting apparatus, accomplish, expeditiously and economically, every description of hoist, whether on land or water, from 10 to 10,000 tons and upwards. The directors are prepared to construct, or license the construction, in any part of Europe, of Patent Floating, Transportable, or Stationary Derricks for Government Arsenals and Navy Yards, Harbour Commissioners, Dock Companies, Shipbuilders, Engineers, Contractors, and others.

A small floating derrick, built for the requirements of the Thames, and employed in lifting and transporting heavy weights, such as steam-engines, boilers, machinery, blocks of stone, &c., recently raised the brig *Lightning*, sunk in Erith Reach. A large floating derrick, specially designed and constructed for raising sunken vessels and for general salvage purposes, is fitting for operation about the coasts of Great Britain and off foreign shores.

A limited number of shares, of £50 each, in the capital stock of the Patent Derrick Company remain for allotment. These shares are required to be paid as follows:—£10 per share on application, and the remainder by calls of £10 each, at intervals of one month between each call.

Forms of application for shares, and prospectuses, may be obtained at the offices of the company.—27, Cornhill, London, E.C.

G. J. SHARP, Sec.

## THE GLOUCESTERSHIRE COAL MINING COMPANY (LIMITED).

Capital £40,000, in 40,000 shares of £1 each, with power to increase.

Deposit, 2s. 6d. per share.

To be incorporated and registered under the Joint-Stock Companies Acts, 1856 and 1857; and liability limited to amount of subscription.

CHAIRMAN—GEORGE CAVENDISH BENTINCK, Esq.

DIRECTORS.

GEORGE CAVENDISH BENTINCK, Esq., 48, Charles-st., Berkeley-square, London.

JOHN DUNNINGTON FLETCHER, 12, Westbourne-terrace, London.

FREDERICK B. PEARSON, Esq., Beaumont House, Reading.

JOHN W. WILLIAMSON, 4, Gloucester Villas, Maida Hill, London.

(With power to add to their number.)

AUDITOR.

William Meates, Esq., accountant, 19, King's Arms-yard, Moorgate-street, London.

SOLICITOR—Walter Federan Nokes, Esq., 11, George-yard, Lombard-street, London.

BANKERS—The City Bank, Threadneedle-street, London.

BROKERS—Messrs. P. W. Thomas, Sons, and Co., 50, Threadneedle-street, London.

CONSULTING ENGINEER—Joseph J. W. Watson, Esq., C. and M.E., F.G.S., &amp;c.

SECRETARY (pro tem.)—Stephen James Green, Esq.

OFFICES OF THE COMPANY, 72, OLD BROAD STREET, LONDON.

PROSPECTUS.

Coal is a staple article of constant and increasing consumption, and the demand which exists for it may be said to be limited only by the quantity that the producer can offer, and the price at which it can be supplied. In the year 1857 upwards of 3,000,000 tons of coal were exported from Great Britain, while the home consumption at first sight appears fabulous, so immense was the quantity. It is obvious, however, that the wants of the country, as respects coal, may be regarded as constantly and rapidly augmenting; and it is not a matter of surprise, therefore, that a good colliery, well situated and well managed, has uniformly proved a lucrative investment. A reference to the statistics of the day will show that there is a fair loss risk, and a greater certainty of large and profitable results, in working collieries than in any other mineral property.

This company is formed for the purpose of purchasing and working the coal in the four grants from the Crown, comprising about 360 acres, on which four well-known collieries, called the True Blue, Newham Bottom, Woodside, and Bircham Grove Collieries, are situated, immediately contiguous to the village of Ruardean, in the Forest of Dean, in the county of Gloucester, in England; together with the railway, plant, steam-engines, tram-wagons, pit-carts, machinery, tools, and all other necessary appliances which, at great expense, have been lately placed on these important properties.

These four grants adjoin each other as shown in the plan furnished, and for all practical purposes, therefore, may be considered as forming one extensive, but very compact estate; they contain about 2,000,000 tons of coal, which is of first-class bituminous character, and much valued for household purposes, for gas, iron-works, smelting, and especially for raising steam. To get this quantity of the rate of 250 tons per day for 360 days in the year will, it may be observed, occupy a period of about 27 years.

Nos. 1 and 2: THE TRUE BLUE AND NEWHAM BOTTOM COLLIERIES.—The grants which contain these collieries are 184 acres in extent, of which at least 100 acres remain unworked. The seam is 5 ft. 8 in. in thickness, and is free from patches, bittchings, or troubles, and with the exception of the horse, which is of little practical importance, of any faults; the yield per square fathom is from 3 to 3½ tons. There are two drawing-pits of the respective depths of 50 and 45 yards now in use at these collieries, also two power steam-engines with boiler and the attendant machinery, more than adequate to the requirements of the work, together with all the necessary plant, including tram-wagons and pit-tube, drawing-tackle, landing stacons, pit-screwing, rails, timbering of the main roads, &amp;c., in the most efficient and perfect order. The yard, with loading bank, weighbridge, smiths' shop, storehouses, &amp;c., is well arranged, both for sorting and dispatching coal. The collieries are, in a word, in full working order, and do not require any further outlay. At True Blue Pit, operations have not yet been carried further than driving out the roads, which, however, are already sufficiently advanced to turn stacons, when 30 tons per day may be raised: the yield of course, progressively increasing as more stacons shall be turned. At Newham Bottom Pit the roads and stacons have been well devised for winning purposes, and from 60 to 70 tons per day are now being raised. Both pits are connected, by well-laid tramroads, with the main line to the Churchway Station on the South Wales and Great Western Railways, and are in the best possible maintenance. These collieries are held in perpetuity from the Crown, subject to the very low royalty of 2d. per ton.

No. 3: THE WOODSIDE COLLIERY.—This grant contains about 60 acres of unworked coal, from 4 to 6 feet thick, of the Coleford High Delf Vein. The coal is raised through two well-made pits. A substantial engine-house, with a superior 50-horse power steam-engine, and two 30-horse boilers, pumps, and all requisite shafting and gearing, foreman's dwelling house, carpenter's and smiths' shops, walled-in coal-yard, and other convenient buildings, the whole of which, with the necessary plant both under and above ground, consisting of tram-wagons, pit carts, rails, working tools, &amp;c., are in good repair. The workings underground are extensive, and there are a sufficient number of stacons turned to raise 150 tons per day. A well-laid tramroad connects both pits with the main line to Churchway. This colliery is held under the Crown for 1000 years, from May 19, 1853, subject to a royalty of 1½d. per ton.

No. 4: THE BIRCHES GROVE COLLIERY.—This grant contains an entirely maiden coal field, and commands from 116 to 120 acres of untouched coal, of the High Delf vein, of the same quality and average thickness as the coal in True Blue and Newham Bottom; it adjoins those collieries on the west, and can be drained and worked most economically through the present workings in them, thus obviating the expense and delay of sinking a pit from the surface and erecting separate machinery. It is held under the Crown in perpetuity, subject to a royalty of 1½d. per ton.

A railway two miles in length has been laid from the collieries in connection with the Bullo Pill branch of the South Wales and Great Western lines, thereby effecting an economical and important transit to the adjacent towns and villages, and by vessels from Bullo Pill Wharf, on the River Severn, to towns on the coast and to all parts of the Continent. The construction of the railway, with the erection of engines, sinking pits, the underground works, the purchase of plant, machinery, tools, &amp;c., and the bringing the collieries to the present excellent working condition, has been accomplished at a cost exceeding £30,000 of actual outlay, judiciously expended.

Two hundred and fifty tons of coal a day may be immediately produced by the company, the cost of which delivered into the railway trucks at Churchway will be 3s. 8½d. per ton, and the average selling price 5s. 6½d. per ton, giving a net profit, after deducting every possible expense, of £7151 5s. per annum (as shown in the accompanying statement of profits), equal to an annual dividend of upwards of 20 per cent. on a capital of £35,000. The daily yield of coal will continually increase as more ground is opened in the several collieries. It is important to observe that this rate of profits is not derived from a calculation made on hypothetical estimates, but is the actual result of the present workings of the collieries.

In addition to the trade now attached to these collieries, all the further coal that can be raised will find a ready market at the ports of Gloucester, Lydney, and Bullo Pill, on the Severn; and as an inland trade at the various towns on the South Wales and Great Western Railway, including Cheltenham, Oxford, Reading, Windsor, Abingdon, Basingstoke, Brimacombe, Cirencester, Marlow, Maidenhead, Newbury, Pangbourne, Swindon, Slough, Stroud, Stonehouse, Uxbridge, Wallingford, and Wycombe, to all of which places the coal from these collieries is regularly supplied.

The directors of this company have conditionally contracted for the acquisition of the coal in the foregoing properties with the railway and all the machinery, plant, &amp;c., attached to the said collieries, at the price of £30,000, to be paid partly in money and partly in shares.

It should appear that £5000 (reserving £5000 not proposed to be called up on the 40,000 shares of the company) is a small working capital, it must be remarked that the property acquired is not an undeveloped property, but on the contrary is producing a large yield of coal at present, and that capital is only required to continue a trade (already in operation) to the extent of producing 250 tons a day, for which purpose £5000 is amply sufficient.

Should it be deemed advisable to increase the capital, and extend the operations of the company, there are other coal fields in the neighbourhood which may be acquired, and which can only be profitably worked by the use of this company's railway and other approaches. It is right also to observe that the railway is in itself a real property, inasmuch as it has a right to tollage from all minerals passing over it, under the provisions of the Dean Forest Act.

No shareholder will incur any liability beyond the amount of shares allotted to him.

The directors do not propose to proceed to carry out the objects in view until such an amount of capital as they are assured will justify the undertaking has been subscribed for.

Applications for shares must be made in the annexed form. Each applicant will be required to pay in to the bankers of the company 2s. 6d. per share on the number of shares applied for, in exchange for which a receipt will be given, and to make a further payment of 15s. on such shares as shall be allotted to him.

In the event of the directors allotting less than the whole number applied for, the amount paid in to the bankers will be applied towards the further payment of 15s. per share payable on the number allotted, but in case no allotment be made, the money so lodged will be forthwith returned in full.

Prospectuses, mining reports, forms of application for shares and of bankers' receipts for deposits may be had of Messrs. F. W. THOMAS, Sons, and Co., Threadneedle-street, London, bankers to the company; of the solicitor; at the City Bank; or the offices of the company, 72, Old Broad-street, London, where plans of the properties may be seen and examined.

## TRESAVEAN MINE, GWENNAP.

POSITIVE AND UNRESERVED SALE OF STEAM ENGINE AND MINING MATERIALS.

MR. LITTLE is instructed to SELL, BY AUCTION, on the 14th day of December, at Eleven o'clock precisely, the following valuable ENGINES and MATERIALS:

ONE 36 in. cylinder ENGINE, 6 ft. stroke, equal beam, with boiler 10 tons.

One 24 in. ditto, 9 ft. stroke, boiler 10 tons.

One 20 in. ditto, with crusher attached, boiler 9 tons.

One 20 in. ditto, with boiler 9 tons.

One 18 in. ditto, with boiler about 11 tons.

One 22 in. ditto, with boiler about 10 tons.

TWO EXCELLENT BOILERS, 12 tons each, with fire-doors, fire-bars, and dampers complete.

ONE WATER-WHEEL, 30 ft. diameter, 3 ft. breast.

One ditto, 28 ft. diameter, 18 in. breast, with saw-mill attached.

One ditto, 40 ft. diameter, 18 in. breast, and stamps with 12 heads.

One ditto, 20 ft. diameter, 18 in. breast.

240 tons, of 14 in. cast-iron rope.

300 tons, of 9 in. cast-iron rope.

120 tons, of 7 in. ditto.

200 tons, of 6½ in. cast-iron rope.

Several lots of ½ in. and ½ in. chain.

10-12 in. pumps, with H and top doorpieces.

14 in. H, and top doorpiece.

22 in. plunger poles, with stuffing boxes and glands to match.

3 cast-iron balance bows, with gudgeons, troughs, and braces to fit.

Several sets of bow straps of different sizes.

Sundry pairs of yokes.

Several lots of tram-road iron.

Machine and whim kibbles.

Horse whims and shaft tackles.

And sundry useful materials.

Scrap iron and cast-iron.

Whim chains of different sizes.

Whim sleeves of different sizes.

200 tons of iron staves ladders.

Several lots of useful timber.

2 smiths' bellows.

3 anvils, 2 vices, smiths and miners' tools.

Cast-iron, pick and shovel hammers.

New and old lead.

Scales, beams, and weights.

5 tram wagons.

Several lots of tram-road iron.

Machine and whim kibbles.

Horse whims and shaft tackles.

And sundry useful materials.

Scrap iron and cast-iron.

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Cast-iron, pick and shovel hammers.

New and old lead.

Scales, beams, and weights.

**OVERLAND ROUTE—WEEKLY COMMUNICATION BY STEAM TO INDIA, &c., VIA EGYPT.**  
THE PENINSULAR AND ORIENTAL STEAM NAVIGATION COMPANY BOOK PASSENGERS and RECEIVE GOODS and PARCELS for the MEDITERRANEAN, EGYPT, ADEN, CEYLON, MADRAS, CALCUTTA, the STRAITS, CHINA, and MANILLA, by their steamers leaving Southampton on the 4th and 20th of every month; and for the MEDITERRANEAN, EGYPT, ADEN, and BOMBAY, by their packets leaving Southampton about the 11th and 27th of the month.

For further particulars, apply at the company's offices, No. 122, Leadenhall-street; and at Oriental-place, Southampton.

STEAM UNDER SIXTY DAYS ECLIPSED.

The following ships, sailing under the Black Ball flag, have beaten the undermentioned steamers of the Eagle line on the passage home from Melbourne:

MARCO POLO	Beat the ROYAL CHARTER eight days.
LIGHTNING	Beat the GREAT BRITAIN ten days.
SHOOTING STAR	Beat the ROYAL CHARTER ten days.
PASSAGE MONEY £14 AND UPWARDS.	

**BLACK BALL LINE BRITISH AND AUSTRALIAN EX-ROYAL MAIL PACKETS.**

Appointed to sail from LIVERPOOL on the 5th of each Month

FOR MELBOURNE,  
Forwarding Passengers by Steam to various Ports in

AUSTRALIA AND TASMANIA.

Ship. Register. Burthen. Captain. Date.

LIGHTNING ..... 2090 ..... 4500 ..... BYTHE ..... 5th January.

MARCO POLO ..... 1625 ..... 3300 ..... CLARKE ..... 5th February.

COMMODORE PERRY ..... 2242 ..... 5000 ..... WEBB ..... 5th March.

DONALD MCKAY ..... 2604 ..... 5000 ..... TORN ..... 5th April.

CHAMPION OF THE SEAS ..... 2480 ..... 5000 ..... MCKIRDY ..... 5th June.

GREAT TASMANIA ..... 2140 ..... 4500 ..... GARDYNE ..... 5th June.

The above line is composed of the LARGEST, the FINEST, and FASTEST MERCHANT SHIPS in the WORLD, and have been built by the most celebrated builders of the day, including M'KAY, of Boston. They are commanded by men who have already rendered themselves famous, and their equipments and accommodations are unequalled by any line of ships afloat.

The Black Ball line has had the distinguished honour of a visit from Her Majesty the Queen, who was most graciously pleased to say that she had no idea there were such magnificent ships in her merchant navy.

Freight and passage, apply to the owners, JAMES BAINES and Co., Liverpool; or to T. M. MACKAY and Co., 2, Moorgate-street, London, E.C.

PASSAGE MONEY £14 AND UPWARDS.

**WHITE STAR LINE OF BRITISH AND AUSTRALIAN EX-ROYAL MAIL PACKETS.**

SAILING BETWEEN

LIVERPOOL AND MELBOURNE, on the 20th and 27th of every month, and forwarding Passengers by Steamers at through rates to

ALL PARTS OF AUSTRALIA.

Ships. Captain. Register. Burthen. To sail.

BEETHWORTH ..... FRAIN ..... 1286 ..... 4000 ..... Dec. 21.

PRINCE OF THE SEAS. BROWN ..... 1427 ..... 4500 ..... Jan. 20.

RED JACKET ..... M. H. O'HALLORAN ..... 2460 ..... 5000 ..... —

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MERMAID ..... J. WHITE ..... 1320 ..... 4900 ..... —

The splendid clipper *Beethworth* is the finest and handsomest packet in port, and will sail punctually at noon of the 21st December. She was built by Donald M'KAY, the celebrated builders of the *Lightning*, *Stag Hound*, *James Baines*, &c., and designed especially for the Liverpool Australian trade. The *Beethworth* was especially selected to carry Her Majesty's troops to the Cape of Good Hope and India, and landed them all in good health. Her saloons are very handsome, upwards of 8 ft. in height, and furnished with every comfort and necessary for the voyage. The accommodations for all classes of passengers are of the most superior order.

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Forwarding Passengers by Steam to various Ports in

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MARCO POLO ..... 1625 ..... 3300 ..... CLARKE ..... 5th February.

COMMODORE PERRY ..... 2242 ..... 5000 ..... WEBB ..... 5th March.

DONALD MCKAY ..... 2604 ..... 5000 ..... TORN ..... 5th April.

CHAMPION OF THE SEAS ..... 2480 ..... 5000 ..... MCKIRDY ..... 5th June.

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Forwarding Passengers by Steam to various Ports in

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## THE MINING SHARE LIST.

## DIVIDEND MINES.

Shares.	Mines.	Paid.	Nom. Pr.	Business.	Dividends Per Share.	Last Paid.
5120 Alfred Consols (cop.), Phillack [S.E.]	2 11 10. 8 8 1/2 8 1/2	.. 19	5 6. 0 2 6-Oct.	1858	..	..
10200 Bampfylde (copper), Devon	12 6. 4 ..	.. 0	0 1/2 0 0 0 1/2	May, 1858	..	..
4000 Bedford United (copper), Tavistock	2 6 8. 5/4 ..	.. 10	8 6. 0 3 0-Dec.	1858	..	..
240 Boscombe (tin), St. Just	20 10 0. 57 1/2 ..	.. 23	0 0. 1 0 0-Nov.	1858	..	..
200 Bonalack (tin, copper), St. Just	91 5 0. 205 ..	.. 428	5 0. 0 2 10 0-Oct.	1858	..	..
4990 Calstock Consols (copper)	5 0 0. 43 1/2 ..	.. 0	2 6. 0 2 6-Dec.	1857	..	..
10000 Carn Bras (copper, tin), Illogan	18 0 0. 62 1/2 60 62 1/2	.. 243	10 0. 0 2 0 0-Aug.	1858	..	..
200 Cern Cwm Brynwy (lead), Cardiganshire	33 0 0. 37 ..	.. 5	0 0. 2 0 0-Mar.	1858	..	..
2000 Colacumbe (copper), Lamerton	5 0 0. 12 1/2 ..	.. 2	5 0. 0 0 8-Dec.	1857	..	..
12000 Coopers Miners of England	25 0 0. 26 ..	.. 7 1/2	per cent. — Half-yrly.	..	..	..
30000 ditto (stock)	100 0 0. 26 ..	.. 24 25	1 per cent. — Half-yrly.	..	..	..
1855 Craddock Moor (copper), St. Just	8 0 0. 30 ..	.. 28 30	2 4 0. 0 5 0-Nov.	1858	..	..
867 Cwm Elin (lead), Cardiganshire	7 10 0. 14 ..	.. 0	10 0. 0 0 10-Nov.	1858	..	..
1250 Cwmyntwith (lead), Cardiganshire	60 0 0. 300 ..	.. 145	0 0. 5 0 0-Sep.	1858	..	..
4076 Devon and Cornwall (copper)	4 6 3. 9 ..	.. 0	7 6. 0 2 6-April	1858	..	..
1024 Devon Gt. Com. (cop.), Tavistock [S.E.]	1 0 0. 460 ..	.. 450	460 639 0 7 0 0-Nov.	1858	..	..
358 Dolcoath (copper, tin), Camborne	128 17 6. 230 ..	.. 225	230 487 10 0 4 0-Oct.	1858	..	..
300 East Daren (lead), Cardiganshire	32 0 0. 110 ..	.. 51	0 0. 3 0 0-Oct.	1858	..	..
2048 East Falmouth (copper), Gwennap	2 0 0. 3 ..	.. 0	7 6. 0 2 6-Jan.	1858	..	..
128 East Pool (tin, copper), Pool, Illogan	24 5 0. 175 ..	.. 305	0 0. 2 10 0-Aug.	1858	..	..
5700 Exmouth (silver-lead), Christow	4 14 0. 8 ..	.. 3	15 0. 0 0 2 6-April	1858	..	..
1400 Eynam Mining Co. (lead), Derbyshire	5 0 0. 38 ..	.. 18	13 4. 1 0 0-Aug.	1858	..	..
243 Grambler and St. Abyan (cop.) [S.E.]	109 10 0. 135 ..	.. 130	135 17 0 3 0-Nov.	1858	..	..
6000 Great South Tolgas [S.E.] Redruth	9 14 6. 14 ..	.. 131	14 2 16 0 5 0-Oct.	1858	..	..
1024 Herdoford (lead), near Liskeard	8 10 0. 67 1/2 ..	.. 4	7 6. 0 0 12-June	1858	..	..
2560 Isle of Man, Limited (lead)	25 0 0. 42 ..	.. 58	8 3. 1 0 0-June	1858	..	..
160 Levant (copper, tin), St. Just	2 10 0. 105 ..	.. 100	105 1076 0 5 0 0-Nov.	1858	..	..
400 Llansure (lead), Cardiganshire, Wales	15 15 0. 100 ..	.. 317	10 0. 2 0 0-Dec.	1858	..	..
5000 Mendip Hills (lead), Somerset	3 15 0. 13 ..	.. 1	13 6. 0 6 0-May	1858	..	..
1800 Minera Mining Co. Lim. (id.), Wrexham	25 0 0. 110 1/2 ..	.. 35	12 6. 2 0 10 0-Nov.	1858	..	..
20000 Mining Co. of Ireland (cop., lead, coal)	7 0 0. 132 ..	.. 132	13 4. 0 5 7-July	1858	..	..
470 Newtownards Mining Co. Co. Down	50 0 0. 25 ..	.. 55	0 0. 1 0 0-Nov.	1858	..	..
6000 N.W. Basset (cop., tin), Illogan [S.E.] mil.	75 8 8 8 1/2 ..	.. 14	12 0. 0 5 0-Aug.	1858	..	..
6400 Par Consols (cop.), St. Blazey [S.E.]	1 2 6. 17 1/2 ..	.. 22	15 0. 0 10 0-Oct.	1858	..	..
200 Phoeni (copper, tin), Linkinhorne	100 0 0. 425 ..	.. 415	425 546 0 8 0 0-Nov.	1858	..	..
1030 Polberro (tin), St. Agnes (Preferential)	15 0 0. 5 ..	.. 18	11 9. 1 0 3-July	1858	..	..
1772 ditto ditto (Old and ditto)	— 5 ..	.. 1	7 0. 0 0 7-Sept.	1858	..	..
540 Providence (tin), Uny Lelant [S.E.]	20 12 3. 65 ..	.. 64	66 79 4. 3 0 0-Nov.	1858	..	..
2500 Rhoswydol and Bachleddon (lead)	11 5 0. 12 ..	.. 0	16 0. 0 3 0-July	1858	..	..
15000 Ruarigan Colliery Company, Limited	0 5 0. 34 ..	.. 0	1 104 0 1 0-Aug.	1858	..	..
256 South Cardon (cop.), St. Cleer [S.E.]	2 10 0. 16 1/2 ..	.. 54	16 17 15 0 10 0-Oct.	1858	..	..
256 South Garnas	26 0 0. 70 ..	.. 2	0 0. 2 0 0-Nov.	1858	..	..
512 South Tolgas (cop.), Redruth, Cornwall	8 0 0. 80 ..	.. 78	80 79 10 0. 2 0 0-Nov.	1858	..	..
490 South Wheal Frances, Illogan [S.E.]	18 18 9. 245 ..	.. 230	240 310 5 0 0 0-Nov.	1858	..	..
20000 St. Day United (tin and copper)	2 0 0. 125 ..	.. 34	34 0 6. 0 1 0-Feb.	1858	..	..
175 St. Ives Consols (tin), St. Ives	16 0 0. 34 ..	.. 30	35 92 0 0 2 10 0-Nov.	1858	..	..
6000 Tincroft (cop., tin), Pool, Illogan [S.E.] mil.	9 0 0. 45 1/2 ..	.. 31	32 18 6. 0 5 0-Aug.	1858	..	..
6400 Tiverton Consols (cop.), St. Cleer [S.E.]	2 10 0. 420 ..	.. 405	410 546 0 8 0 0-Nov.	1858	..	..
256 South Gartas	26 0 0. 70 ..	.. 2	0 0. 2 0 0-Nov.	1858	..	..
512 South Tolgas (cop.), Redruth, Cornwall	8 0 0. 80 ..	.. 78	80 79 10 0. 2 0 0-Nov.	1858	..	..
490 South Wheal Frances, Illogan [S.E.]	18 18 9. 245 ..	.. 230	240 310 5 0 0 0-Nov.	1858	..	..
20000 St. Day United (tin and copper)	2 0 0. 125 ..	.. 34	34 0 6. 0 1 0-Feb.	1858	..	..
175 St. Ives Consols (tin), St. Ives	16 0 0. 34 ..	.. 30	35 92 0 0 2 10 0-Nov.	1858	..	..
6000 Tincroft (cop., tin), Pool, Illogan [S.E.] mil.	9 0 0. 45 1/2 ..	.. 31	32 18 6. 0 5 0-Aug.	1858	..	..
20000 Vale of Towy (lead), Carmarthen [S.E.]	12 6 13 ..	.. 78	78 0 5 0 1 0-Aug.	1858	..	..
512 Wendron Consols (tin), Wendron	23 7 8. 43 ..	.. 50	52 0 1 0 0 1 0-Oct.	1858	..	..
256 South Gartas	26 0 0. 70 ..	.. 2	0 0. 2 0 0-Nov.	1858	..	..
512 South Tolgas (cop.), Redruth, Cornwall	8 0 0. 80 ..	.. 78	80 79 10 0. 2 0 0-Nov.	1858	..	..
490 South Wheal Frances, Illogan [S.E.]	18 18 9. 245 ..	.. 230	240 310 5 0 0 0-Nov.	1858	..	..
20000 St. Day United (tin and copper)	2 0 0. 125 ..	.. 34	34 0 6. 0 1 0-Feb.	1858	..	..
175 St. Ives Consols (tin), St. Ives	16 0 0. 34 ..	.. 30	35 92 0 0 2 10 0-Nov.	1858	..	..
6000 Tincroft (cop., tin), Pool, Illogan [S.E.] mil.	9 0 0. 45 1/2 ..	.. 31	32 18 6. 0 5 0-Aug.	1858	..	..
20000 Vale of Towy (lead), Carmarthen [S.E.]	12 6 13 ..	.. 78	78 0 5 0 1 0-Aug.	1858	..	..
512 Wendron Consols (tin), Wendron	23 7 8. 43 ..	.. 50	52 0 1 0 0 1 0-Oct.	1858	..	..
256 South Gartas	26 0 0. 70 ..	.. 2	0 0. 2 0 0-Nov.	1858	..	..
512 South Tolgas (cop.), Redruth, Cornwall	8 0 0. 80 ..	.. 78	80 79 10 0. 2 0 0-Nov.	1858	..	..
490 South Wheal Frances, Illogan [S.E.]	18 18 9. 245 ..	.. 230	240 310 5 0 0 0-Nov.	1858	..	..
20000 St. Day United (tin and copper)	2 0 0. 125 ..	.. 34	34 0 6. 0 1 0-Feb.	1858	..	..
175 St. Ives Consols (tin), St. Ives	16 0 0. 34 ..	.. 30	35 92 0 0 2 10 0-Nov.	1858	..	..
6000 Tincroft (cop., tin), Pool, Illogan [S.E.] mil.	9 0 0. 45 1/2 ..	.. 31	32 18 6. 0 5 0-Aug.	1858	..	..
20000 Vale of Towy (lead), Carmarthen [S.E.]	12 6 13 ..	.. 78	78 0 5 0 1 0-Aug.	1858	..	..
512 Wendron Consols (tin), Wendron	23 7 8. 43 ..	.. 50	52 0 1 0 0 1 0-Oct.	1858	..	..
256 South Gartas	26 0 0. 70 ..	.. 2	0 0. 2 0 0-Nov.	1858	..	..
512 South Tolgas (cop.), Redruth, Cornwall	8 0 0. 80 ..	.. 78	80 79 10 0. 2 0 0-Nov.	1858	..	..
490 South Wheal Frances, Illogan [S.E.]	18 18 9. 245 ..	.. 230	240 310 5 0 0 0-Nov.	1858	..	..
20000 St. Day United (tin and copper)	2 0 0. 125 ..	.. 34	34 0 6. 0 1 0-Feb.	1858	..	..
175 St. Ives Consols (tin), St. Ives	16 0 0. 34 ..	.. 30	35 92 0 0 2 10 0-Nov.	1858	..	..
6000 Tincroft (cop., tin), Pool, Illogan [S.E.] mil.	9 0 0. 45 1/2 ..	.. 31	32 18 6. 0 5 0-Aug.	1858	..	..
20000 Vale of Towy (lead), Carmarthen [S.E.]	12 6 13 ..	.. 78	78 0 5 0 1 0-Aug.	1858	..	..
512 Wendron Consols (tin), Wendron	23 7 8. 43 ..	.. 50	52 0 1 0 0 1 0-Oct.	1858	..	..
256 South Gartas	26 0 0. 70 ..	.. 2	0 0. 2 0 0-Nov.	1858	..	..
512 South Tolgas (cop.), Redruth, Cornwall	8 0 0. 80 ..	.. 78	80 79 10 0. 2 0 0-Nov.	1858	..	..
490 South Wheal Frances, Illogan [S.E.]	18 18 9. 245 ..	.. 230	240 310 5 0 0 0-Nov.	1858	..	..
20000 St. Day United (tin and copper)	2 0 0. 125 ..	.. 34	34 0 6. 0 1 0-Feb.	1858	..	..
175 St. Ives Consols (tin), St. Ives	16 0 0. 34 ..	.. 30	35 92 0 0 2 10 0-Nov.	1858	..	..
6000 Tincroft (cop., tin), Pool, Illogan [S.E.] mil.	9 0 0. 45 1/2 ..	.. 31	32 18 6. 0 5 0-Aug.	1858	..	..
20000 Vale of Towy (lead), Carmarthen [S.E.]	12 6 13 ..	.. 78	78 0 5 0 1			